

# NEXTWORLD

DECEMBER 1993

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The People  
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Flat-out Race  
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3.2, PDO Ship;  
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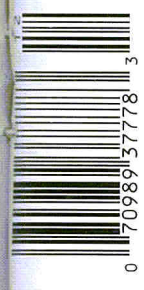
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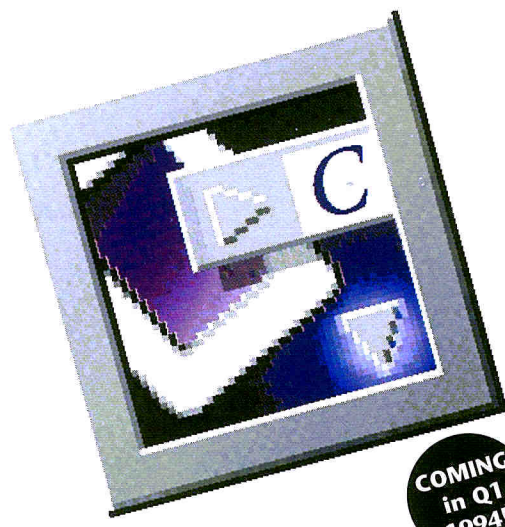
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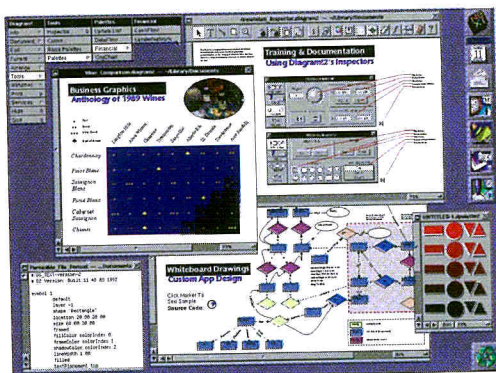


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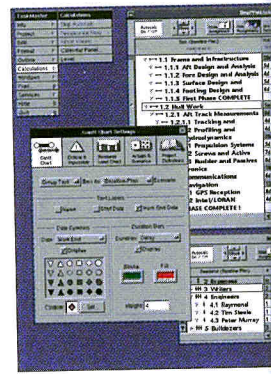
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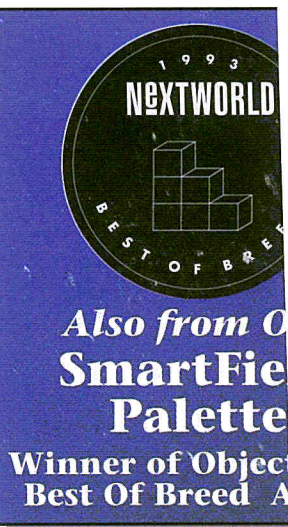
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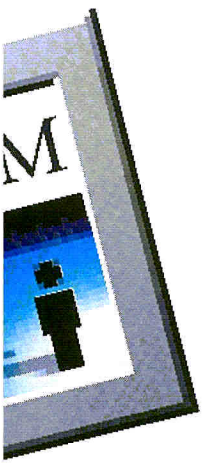
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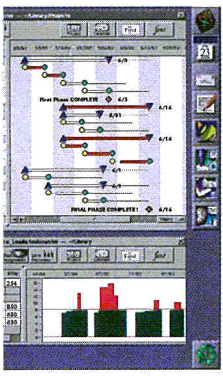
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Management for NEXTSTEP



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December, Volume 3, Issue 8



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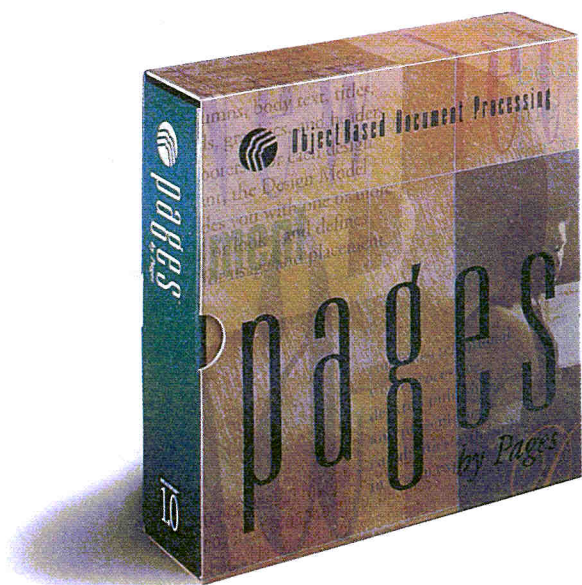
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Scott Kim hatches a secret plot

Cover Illustration by Gordon Studer



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**T**he demise of RightBrain's general health strategic m

companies were at le they might have pros enough to survive in

Three years ago, plans to launch NEX developing NeXT ma software markets for p tosh and Windows. B lished business plans ba market software sales t

In the interim, for vision of its own mark on in-house developn came the collapse of N and eventually the fail products.

All the companies faced a choice: Rethi and adapt to the new

Many NeXT dev adapting their strategi bution system. Others

With a substantial suite of productivity a Adams had wanted to distribution through i would never have pr

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**T**he demise of two prominent NEXTSTEP software companies, RightBrain Software and Appsoft, has less to do with the general health of the NeXT market than with the companies' own strategic mistakes. Not to speak ill of the dearly departed, but both companies were at least partly responsible for their own problems. Sure, they might have prospered in a thriving market, but neither proved cunning enough to survive in an emerging market.

Three years ago, when Glenn Reid and Randy Adams were making plans to launch NEXTSTEP software companies, most observers saw the developing NeXT market in the tradition of software markets for platforms such as Macintosh and Windows. Both entrepreneurs established business plans based on the model of mass-market software sales to end users.

In the interim, for various reasons, NeXT's vision of its own market has changed to focus on in-house development. With that change came the collapse of NeXT's reseller channel and eventually the failure of its own hardware products.

All the companies in the NeXT food chain faced a choice: Rethink the business model and adapt to the new reality or slowly wither on the vine.

Many NeXT developers were prepared to go where NeXT led them, adapting their strategies to coincide with NeXT's target markets and distribution system. Others were not able or did not want to make the shift.

With a substantial venture-capital investment in its notion of a complete suite of productivity apps, Appsoft was poorly positioned to adapt, even if Adams had wanted to. The company's business model was based on mass distribution through indirect channels. Any scale-back in its sales volumes would never have produced the necessary revenues. One might question

any number of decisions Appsoft made in its two-plus years of existence. But the truth is that it was probably doomed from the start.

RightBrain is a different case. With its conservative philosophy of bootstrapping new products from its own revenues, the company could have survived and even prospered by altering its focus from mainstream desktop publishing to corporate communications. But Reid wasn't interested in finding his place in the custom-applications market. He stubbornly stuck to the mainstream vision until reality forced him to pull the plug.

By folding now, just as NEXTSTEP is moving to customer sites at a vastly increased clip, both companies will miss the coming wave of third-party software sales. Fortunately, much of their code will make the transition. With technology sales to Anderson Financial and IT Solutions, RightBrain's code base will turn up in a variety of word processing, graphics, and ObjectWare products. Some of Appsoft's code may also see new life.

The companies that acquire these software assets will bear the fruit of seeds planted by RightBrain and Appsoft. By adapting the code meant for monolithic apps into exten-

sible and modular programs that fit the needs of in-house developers, they will help design a new model of software development and distribution for object-oriented environments.

Meanwhile, for epitaphs, look no farther than the companies' own marketing T-shirts. Appsoft's shirt says, "Killer Apps. Software for the Way You Work." RightBrain's reads: "PasteUp. Yes It Will." As things turned out, it wasn't and it won't. ♦

DAN RUBY is NeXTWORLD's editor in chief.

## The Shirts Off Their Backs

DAN RUBY

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## Barlow barbs

John Perry Barlow's latest column is a tempting target ("Homer on the Range," *NeXTWORLD*, October 1993). "Smoke shoveling" indeed! For one thing, "the idea that the PC might free modern workers from corporate bondage" is patently false. Corporations exist for some very practical reasons, not the least of which is to get workers to work.

As for "tools that embody a sense of mission far more potent than mere productivity solutions," let's get real. A tool, by definition, is "merely" a productivity solution. Furthermore, if Steve Jobs is expedient, it is because he is maturing as an entrepreneur. And if John Sculley is a visionary, it is only because he had the common sense to peel the Macintosh.

So, "What, outside of survival, is the point?" The answer is simple: success.

BURT KENNEDY  
Los Angeles

For quite some time, people have pontificated on NeXT's ability to survive. Each time, the pontification is replete with statements such as Barlow's "NeXT, if it survives (and I believe it will) . . ." NeXT has survived to this point. It still exists, and offers the software marketplace an exceedingly viable alternative to substandard software systems on other hardware platforms.

Many American businesses do not have the corporate strength of character to make the difficult decisions required to do business well. I admire the fortitude the people at NeXT exhibit as they challenge the rest of us in American business to get back to the basics, and to do them well.

TOM WINANS  
Object Technology Center  
Boulder, Colorado

## Price points

I disagree with Dan Ruby when he says that NEXTSTEP isn't too expensive ("Running the Numbers," *NeXTWORLD*, August 1993). Back when the Mac used to be my system of

choice, I would try to talk people into buying Macs instead of PCs. "Why should I spend \$2000 on a Mac when I can get a PC that runs Windows for \$1500?" they said. I can already hear the people who are in the market for a 32-bit OS saying, "Why should I spend \$800 on NEXTSTEP when I can get NT for \$300? And anyway, Cairo will be out in a year and that will have all the features of NEXTSTEP." It won't matter that NEXTSTEP is better because no one will have a frame of reference to know how good it is.

JERALD DAWSON  
Wauconda, Illinois

*In the corporate market addressed by NeXT, the price of the development software is insignificant compared with the costs of the programmers or the benefits of the application. NeXT's pricing may be costing it end-user sales, but that's not the company's target market.*  
— Dan Ruby

## Reverse psychology

In the September issue of *NeXTWORLD Extra*, you mention Quix's ROM upgrade to NeXTstations to make them Mac capable. Wouldn't it be more interesting to make Macs NeXT capable by changing the ROMs on the Mac?

ALYKHAN JETHA  
Mississauga, Ontario

*Infinitely. But considering the legal obstacles involved, we're not holding our breath.* — NW

## Best of Bug?

We were amazed to read in your August issue that the software package of RightBrain called PasteUp was awarded with the Best of Breed award. The first version of PasteUp was a

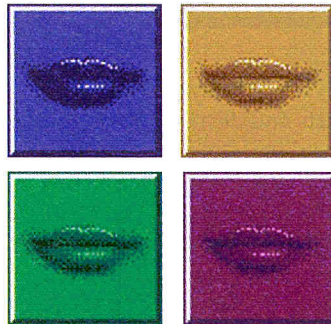
great disappointment, because it crashed all the time. This problem was even published by your magazine some time ago.

The update of PasteUp did improve, but we realized that the promised features of color separations are very limited.

Who hands out these awards, and who does the testing of these programs? I would like to hear from the person who decided that PasteUp was such a great program, if he or she has really tested all the output possibilities.

T. THOMAS HENSCHKE  
Frankfurt, Germany

*Our judges determined that PasteUp's 2.x version, which is reviewed*



*in this issue, solved enough of the program's earlier problems that it deserved the nod for best Document Creation program against undistinguished competition. Regrettably, except for PasteUp's change of ownership, not much has changed since May.*  
— NW

## Batting 1.000

I love the format of your Intel Box Scores, particularly the performance graph, which shows at a glance where

each machine places compared to a NeXTstation Turbo Color.

I hope that when you review the less standard machines (like the NEC Versa laptop) that you will have more discussion of the machine's options and how they work with NEXTSTEP. Issues like power management, on-board screen options, and external monitor support probably aren't as obvious to your readership as desktop machine configurations.

PAUL VERKET  
Manhattan Beach, California

*Beginning with this issue supplementing our Box Scores with a short article amplifying the summary data.* — NW

## Sense out of HyperCard

As a user of authoring software, I'd like to record straight about authoring software for NEXTSTEP. HyperCard for NEXTSTEP may have frills that please some, but it is in no way possible to a nonprogrammer.

So I was sorry that I was so dismissive of HyperCard in my review ("HyperCard for NEXTSTEP," *NeXTWORLD*, August 1993). Sense is certainly not just a word. HyperCard for NEXTSTEP is the basic HyperCard philosophy: authoring software should be simple and flexible enough to produce sophisticated courseware for a university department quickly and easily.

"Not everyone has to program with HyperCard and InterfaceBuilder," a man concedes in his comment on the Best of Breed award. That's why we ordinary mortals choose HyperCard as our preferred authoring

CELIA DUFFY  
University of Glasgow, Scotland

## For the record

In "News in Brief" (*NeXTWORLD Extra*, November), the performance of the Intel Box Score for Epitome was incorrect. It can be reached at 615/966-2558 fax.

**NeXTWORLD welcomes comments. Please send them to: NeXTWORLD, 501 S. Francisco, CA 94107. E-mail: letters@nextworld.com**

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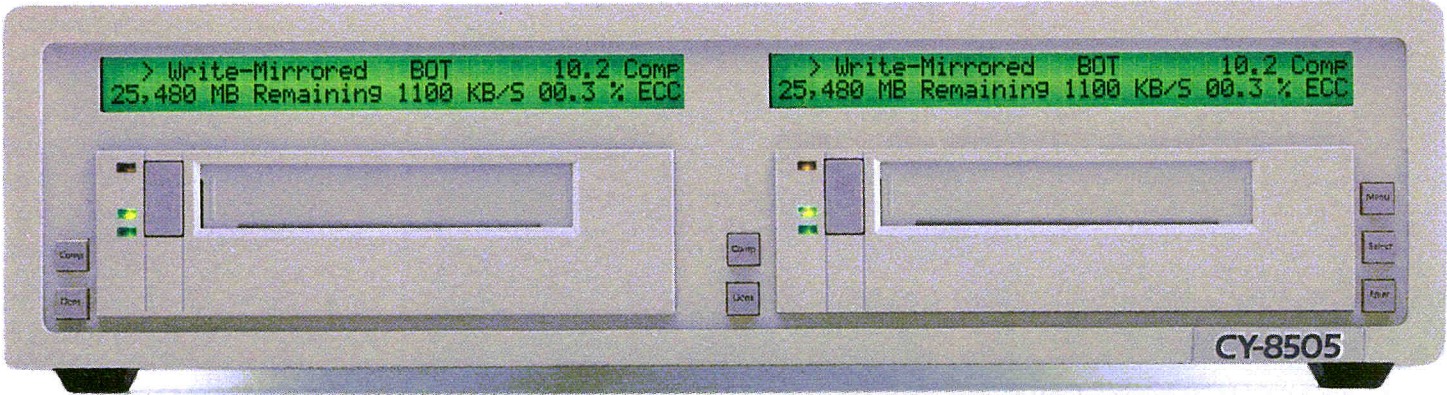
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## Three Scotts and a Duane

NET PEOPLE

DURING ONE MONTH AT THE END OF THIS SUMMER, 1521 PEOPLE POSTED MORE than 50,000 messages to the Usenet's comp.sys.next special-interest groups. That's more than 1600 messages per day and a measure of the Internet community's continued strong interest in NEXTSTEP.

Indeed, for many people, the Usenet is one of the primary sources for up-to-date information about what's happening in the NeXT community. That's largely because of both the Net's speed (a message posted to a NeXT user group crisscrosses the United States in only a few hours) and the breadth of the its readership (practically everyone who programs, manages, or buys NEXTSTEP-based computers spends at least some time each week catching up on NeXT Net news).

Despite their subject matter, the comp.sys.next Usenet groups have no direct affiliation with NeXT. That's because, for the most part, the Usenet is a cooperative network. In the style of a 21st-century New England town meeting, anybody who wants to post a message to the network is free to do so. Any system administrator who wants to get these news groups simply has to find a system administrator at another site who is willing to provide a feed.

The NeXT Usenet groups are much more about opinions and personalities than about carefully written commentary. Of the nine groups, only one — comp.sys.next.announce — is edited in any fashion at all. A moderator reads each message before it is posted, to make sure it complies with guidelines that allow for announcements rather than open discussion. It's an unpaid, volunteer position, held these days by Scott Anguish.

Although you would never know it from his e-mail address (sanguish@digifix.com), Anguish is a Canadian citizen who works out of his house in Waterloo, Ontario. He got into the NeXT world three years ago at a Businessland seminar in North Carolina. At the time, he was working on a textile-design program for the Macintosh. Realizing that NEXTSTEP's UNIX system and built-in Display PostScript capabilities would help him give customers a more powerful system, he ordered a Cube and signed up for Developer Camp.

In addition to opening his eyes to the world of object-oriented programming, Anguish's first NeXTcube also opened up the world of the Internet. A few days after the machine arrived, Anguish set up a UUCP connection with UUNET in Falls Church, Virginia. "I had heard about [the Internet], but I had no idea it was so vast," he recalls. During the six months it took to get his news software up and running, he read the raw files as they came over his modem link. These days, though, he's replaced the Cube with a NeXTstation Color with 48MB of RAM and 1GB of on-line storage.

Since then, Anguish's Macintosh-based textile-design system has been a limited success. "The Mac version has sold probably 300-plus copies — and 90 percent of those included hardware," he says. "At least a few of the big companies will be upgrading to a NEXTSTEP system by the end of the year." Large companies like Reebok and Starter need a more powerful computing platform to keep up with the dizzying rate at which fashions change.

"I like [NeXT's new] focus on mission-critical stuff, although I don't like what it does to the more horizontal application pricing," Anguish says. "I think, however, that the horizontal developers should be able to make a go of it anyway, since sites running 500 copies of NEXTSTEP are still going to need word processors and drawing programs."

Another well-known Scott on the Net is Scott Hess (scott@gac.edu), author of the popular shareware Stuart, a replacement for the bundled Terminal application. Hess wrote Stuart in the days of NEXTSTEP 1.0. Back then, NeXT shipped the operating system with two different (and incompatible) terminal-emulation programs: Shell and Terminal. Hess wrote his application from scratch, taking the best ideas from the other two and tossing in his own as well. Stuart was so much better than NeXT's programs that when NeXT started working on NEXTSTEP 2.0, they hired Hess as a consultant and licensed Stuart from him to use as the basis for 2.0's improved Terminal application.

In the spring of 1988, Hess started working with NEXTSTEP at Gustavus Adolphus College in St. Peter, Minnesota, using a beta '030 Cube with NEXTSTEP 0.8. "I badgered them until I got to play with it, and, based on that week of experience, got a job at the Mayo Clinic Research Computing Facility that summer."

Now 24, Hess makes a living from consulting and shareware, selling an improved version of Stuart and another program called TickleServices. "I'm hoping that in 1994 I can stop doing external consulting and just concentrate on writing my own programs," he explains.

The third Scott is Eric P. Scott (eps@toaster.sfsu.edu), one of the elders of the NeXT news groups. Scott fell into the NeXT community right at the beginning, when he was working as a consultant and a part-time office clerk at San Francisco State University's computing center. "In mid-October 1988, one of our people came back from NeXT's introduction with very positive feelings. On-campus demos followed, and we got our first machines in early 1989," he says.

These days, Scott is still employed full time by the university. While he spends most of his time on administrative work

for the Computer Science department, he still has time for his own pet projects. Last year, for example, Scott discovered a bug in NEXTSTEP that let any user browse the files of any NEXTSTEP system attached to the Internet. Instead of merely reporting the bug, he wrote a fully functional application for spying on files and sent it to NeXT's tech support.

Nevertheless, despite his software wizardry, Scott would rather be hacking hardware. "I have great respect for hardware," he says. "In fact, that's probably what I'd be doing today if it weren't for the fact that free computer time was — and still is — a lot easier to come by than access to electronics and test equipment."

The most prolific poster to the NeXT news groups at the end of the summer was Duane Takamine (duane@shell.portal.com), who posted 71 messages in a 30-day period. Takamine says that his status as the number-one poster is mostly an accident: He recently changed his Usenet service from one that charges by the hour to one that charges only a flat monthly fee.

Based in Honolulu, Takamine works out of his house as an independent software developer. "I can't stand eight-to-five, so I go where the wind blows," he says. Currently, he's working on a number of projects for local hospitals, but none of them involve NEXTSTEP right now. "Unfortunately, NeXT is just a hobby, although I think that eventually NEXTSTEP technology will slip into the projects I'm working on," he says. ♦

by SIMSON L. GARFINKEL

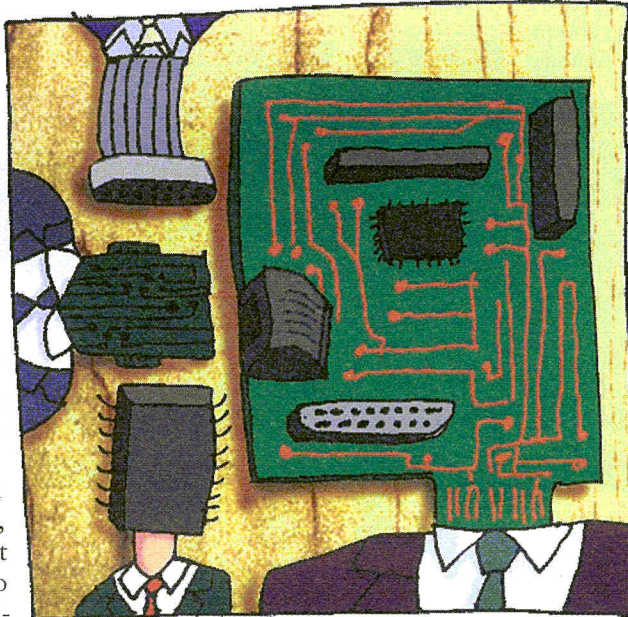


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Vince Jordan sees the future of technology in people.

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PHOTOGRAPH BY JACK ZEMAN



## Communication and Collaboration

C O M M E N T A R Y



Vince Jordan sees the promise of object technology in people working together.

IT'S CLEAR THAT OBJECT TECHNOLOGY IS GOING TO CHANGE the face of business-systems development as we know it today. Or I should say, after building systems on mainframes and minis for a decade and a half, then spending the last four years using objects, it's very clear to me.

For years, systems delivery was remarkably unpredictable and inconsistent. Development organizations lowered the expectations of customers and generated extended time lines that could rarely be met. If they were, product quality suffered.

Object technology developed out of the need to solve these problems and is steering us in another direction, away from broken promises and toward empowering technological leadership in our cus-

tomers. By encouraging them to think about what could be, expanding their sights, raising their expectations, and then delivering a quality product on time, we're seeing the development process actually become a pleasurable, profitable experience for all involved.

Yet where are the real gains? We already know the apparent benefits: software that's rapid to build, rapid to change, and easy to reuse. But these relate only to the mechanical aspects of development – creating classes, building palettes, designing interfaces, compiling, and debugging. The benefits derived from changes in the way developers work together as people can be even more profound.

Looking deeper, I find two underlying aspects of this technology striking: communication and collaboration. Objects in isolation, while useful, are rarely extensible. By itself, a timer object can track the passing of time – but only that. The same object, however, when collaborating with others, can generate powerful functionality: tracking patient histories, scheduling x-rays, initiating the movement of stocks and securities, providing automatic disaster recovery, managing entire networks. Unless an object is communicating with other objects, its usefulness is bound by what it alone understands and can accomplish.

The same is true for people.

Object technology, by its very nature, pushes development teams toward significant and consistent communication and collaboration. As people communicate and collaborate, their natural strengths and capabilities surface. In the right environment, balancing these qualities between individuals becomes a workable, and, moreover, natural process. But communication and collaboration cannot be treated as secondary or voluntary. These activities and the people involved need an environment that encourages them to become part of object technology: to emulate objects, to communicate and collaborate. Cross-sectional work groups can facilitate this need, as part of each person's job then becomes communicating with people on other teams.

A natural outcome of this communication is collaboration. By communicating project information, different teams can identify common problems and processes and then collaborate to eliminate duplicate efforts. People in a collaborative environment can leverage the capabilities and knowledge of others, enhance and contribute their own areas of expertise, and produce libraries of distinguishable objects. Special teams of object architects can continually reengineer the software for even greater reusability and applicability across the board.

But how do we apply the vision of this ideal environment to the real world? By implementing several strategies, I have seen development teams – many times

Page 12

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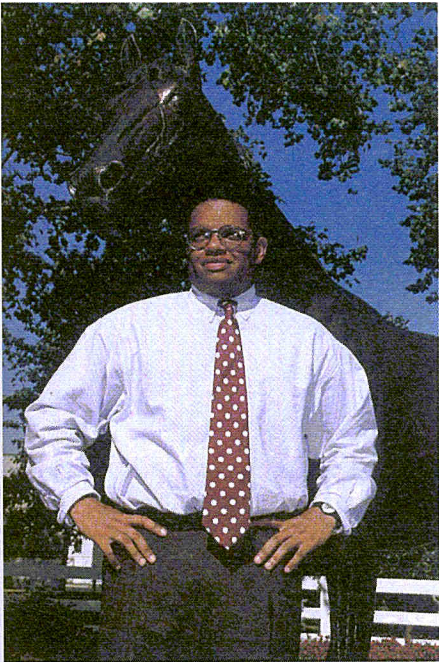
# Hot Tip: NEXTSTEP

D E V E L O P E R / C O N S U L T A N T

NEIL GREENE HAS A HOT TIP FOR TECHNOLOGY RAILBIRDS: FOR CUSTOM APPLICATIONS IN BUSINESSES as diverse as medical practice and horse racing, take the odds on NEXTSTEP.

Greene placed his own bet on NeXT's object-oriented operating system as a student and user-group leader at the University of Kentucky, and he has ridden it to success as a NEXTSTEP consultant, reseller, and software developer.

One unlikely place where he finished in the money is the Association of Racing Commissioners International (RCI), which is basing at least part of a national licensing system on Greene and his company, benchMark Developments. Based in Louisville, RCI is the central office of a confederation of roughly 60 racing jurisdictions around the world. One of its most important functions is serving as a central clearinghouse of licensing information for nearly everyone who works at a track, from jockeys to concession workers.



Neil Greene is betting on NEXTSTEP to take the lead in object-oriented programming.

People in the horse-racing world travel from circuit to circuit, and local officials need to confirm licenses granted in other jurisdictions and check for disciplinary actions, such as suspensions, that might apply.

Greene has put all of this information on a heavily laden NeXTcube with 40MB of memory and 3.5GB of storage. He manages the data through a suite of custom applications he developed, which integrate through DBKit to an Oracle database.

Maintaining the data is the first step; more difficult is the problem of making it readily available to officials at the local tracks. Currently, some jurisdictions around the world log into the system using a plain tty shell over Tymnet. Others use microfiche, based on printouts from the NeXT, as the data-distribution medium.

Greene finds that both solutions are ungainly and vary from place to place, causing duplication of efforts. Working with McKinnie Systems in Los Angeles, a provider of turnkey data systems for racetracks, Greene is developing a hardware and software solution that could yield a nationwide standard for license verification. In the plan, licensees will have an encrypted "smart card," resembling a credit card, with their identifying information and history. The card, developed by a small company in Israel that Greene brought into the deal, even stores fingerprint data.

McKinnie is building custom systems to use its smart cards and verify their contents in real time with Greene's system in Kentucky. The company has several NEXTSTEP-for-Intel systems on site, and Greene hopes that the operating system is chosen for the worldwide rollout.

Along with his work at RCI, Greene also has a company he founded with a few college buddies to resell NEXTSTEP and distribute third-party software. "We started benchMark because there was no one else in Kentucky handling NeXT products. We were all consultants for math sciences at the U. of Kentucky and started working with NEXTSTEP 0.8 in 1988," he says.

Along with partners Kevin Solly and J.T. Ice, Greene had used UNIX workstations and played around on Macs a lot. They started the user group KYNUG (Kentucky NeXT User Group) first but wanted to pump the product to people in a formal, professional manner as well. Forming a company seemed like the best course, so they did in September 1992.

Dealing in NeXT hardware, however, was less interesting than developing cus-

Page 10

PHOTOGRAPH BY MICHAEL C. MU

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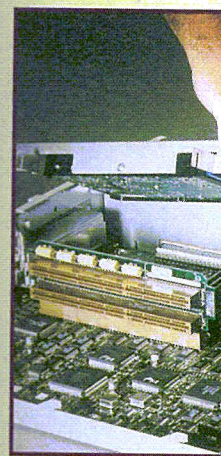
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While working on the medical-client station, benchMark has joined with NeXT and KYNUG in presenting seminars around the nation on medical solutions using NEXTSTEP. When the medical-client station is ready, a

Hey railbirds, want another tip? Bet on Greene. He's only 27. ♣

by DAN LAVIN



For developers, C-based Software Service “to warp speed.” Also InterfaceBuilder and I pare two source-code

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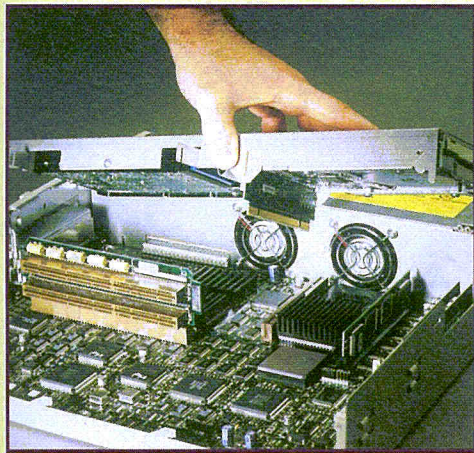
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## Smooth Segue

VALUE-ADDED INTEGRATOR



EVEN BEFORE NeXT DELIVERED THE FINAL version of NEXTSTEP 3.1 for Intel Processors on May 25 at NeXTWORLD Expo, systems integrator Continental Computer Systems was supplying one of its major customers with fully configured white hardware that worked right out of the box.

Continental has nearly a decade of experience in consulting, custom programming, and configuring UNIX systems on industry-standard hardware. "We built our reputation on building the best multiuser UNIX systems in the world that run on an Intel

platform," says Sales Manager Joe Bacher. Prior to signing on as a NeXT business partner, those systems were configured with SCO (Santa Cruz Operations) UNIX. Now that NeXT has made the move to industry-standard hardware, Continental is committed to bringing NEXTSTEP to its "extremely demanding" customer base.

"Ninety-nine percent of our business is SCO or other UNIX vendors," Bacher says. "But I suspect that within a five-year period, the NeXT portion of our business will be the largest part of our business, because NEXTSTEP is the most exciting UNIX operating system available today, and the world just needs to understand that."

One person who already does is Rodney A. Bouchard, Continental's director of business development, the person specifically focused on evangelizing the benefits of object-oriented technology to both existing and new customer sites. "I understand the need to stay ahead of the curve," says Bouchard, "getting applications developed on time, within budget, and with integrity. I believe the object-oriented model that NEXTSTEP provides is the best thing I've seen for making sure that takes place."

Despite some initial concerns over NeXT's financial viability, Continental's decision to offer NEXTSTEP eventually resulted from NeXT's ability to provide the systems integrator with a leadership position in the emerging market for object-oriented solutions. While Continental evaluated offerings from nearly all of the major system-software vendors, only NeXT delivers a product that could meet the needs of its customers today. "Our typical customer is the large corporation that is trying to make the transition from the old legacy systems to client-server computing," says Bouchard. Although it was only a rumor at the time Continental signed on with NeXT, the Object•Enterprise alliance with Hewlett-Packard was another important selling point.

Continental's value-added approach to systems integration is a natural fit with NEXTSTEP's ability to unify the desktop. As it had once done with SCO UNIX, the company took a hard look at how it could improve NEXTSTEP: The development tools were strong but could be better, and the environment was lacking in information-management, connectivity, and system-administration tools. To improve the development tools, Continental came up with the Connect Kit, the heart of which is Wan Manage, a program that provides a framework for network administration and an easy way to manage UUCP connections. Connect Kit also includes software that allows NEXTSTEP systems to read disks from Sun and other UNIX workstations.

For developers, Continental is bundling a suite of tools from Meriden, Connecticut-based Software Services & Solutions that Bouchard says accelerates NEXTSTEP development "to warp speed." Also, the Connect Kit includes a set of palettes that can be used with InterfaceBuilder and DBKit, a graphical revision-control system, and a tool that can compare two source-code files and detail the changes. The QuickBase SQL

Page 13

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**Commentary**

with diverse expertise and skill levels – deliver results that are exciting, and, time and again, surprising. Although every organization has its own unique requirements, some of these strategies can be generally applied, such as central-object architecture teams, access to a central object repository from all development sites, project libraries, domain owners steering domain-specific development efforts, and discussion-oriented mail applications.

Importantly, neither a development staff nor a company will realize the full benefit of using object technology if communication and collaboration strategies aren't implemented. Object technology will just become another turn in the long history of innovations – 3GLs, 4GLs, CASE – that turn out to be less than revolutionary.

I have observed many object development efforts. Some fail far short of the promise, while others surpass the objective, accomplishing more than ever expected. When a spirit of communication and collaboration is absent or weak, even a highly skilled team of developers can miss the mark. Often, a group like this delivers the very results they were trying to avoid; using object

technology poorly can, for instance, create unmaintainable legacy systems.

But in a true object-oriented environment, familiar symptoms of old problems – budget overruns, schedule lapses, low quality – can fade into the past. People will start to discover they are gaining far more than the elegant, high-quality systems, delivered on time and within budget, for which they've been struggling. Wringing the inefficiencies out of business processes, object technology enables companies to achieve what they've really been seeking all along:

- money saved, money earned, greater return on investment;
- faster time to market, faster market capture, secure market share; and
- organizations, formerly based on internal competitiveness, transformed into healthier, team-based units.

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**VINCE JORDAN** is vice-president of object technology for SHL Systemhouse. He leads SHL's Object Technology Center, based in Boulder, Colorado. He can be reached at [vjordan@Radiomail.net](mailto:vjordan@Radiomail.net).



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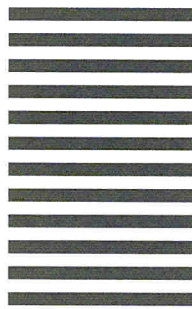
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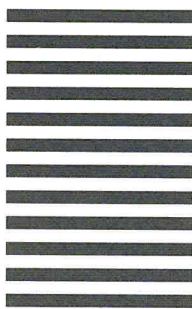
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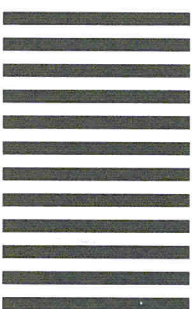
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"NeXT management chart. While we might think our team is finally solid, the door, "increased drive promises fulfilled, we Coast Developers' C

RANK	LAST ISSUE	MONTH ON LIST
1	2	5
2	-	1
3	3	4
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**Continental**  
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turnkey database solution. In addition to its from desktop to tower a white computer than tion. "We have the pro ATI drivers, and the r out and try to stay in afraid to integrate sor

This forward thin demo center in its Ne hopes will become a particular and object-

NeXT needs part enterprise-wide solution. In this approach, Continental is NEXTSTEP. "Custom with a strong UNIX b software knowledge bu solutions. It seemed like it on the NeXT platfor

by LEE SHERMAN





## TEN MOST WANTED

"NeXT management stability" gets retired after more than a year on the chart. While we might not always agree with the message, NeXT's executive team is finally speaking with a single voice. Also, with 3.2 out the door, "increased driver support" and "SoftPC" go in the bag. With those promises fulfilled, we'll be listening for new ones at Comdex and the East Coast Developers' Conference.

RANK	LAST ISSUE	MONTHS ON LIST	ITEM	COMMENT
1	2	5	Expanded indirect channel	Object Channel is a foundation
2	—	1	Intel word processors	Glaring hole
3	3	4	Direct sales results	Big sites, sign in please
4	4	2	Rebirth of app market	Based on extensibility
5	9	3	More NS ports	Catch a spark, get some power
6	5	3	Product road map	Time to raise expectations
7	7	3	Preloaded notebooks	We're hitting the road
8	8	3	PDOs everywhere	Need choice of servers
9	—	—	DBKit overhaul	Key to corporate suite
10	—	—	NEXTIME progress	Multimedia for business

## Continental

server, developed by SofDesign Solutions of Greenwich, Connecticut, is a turnkey database solution that works with DBKit.

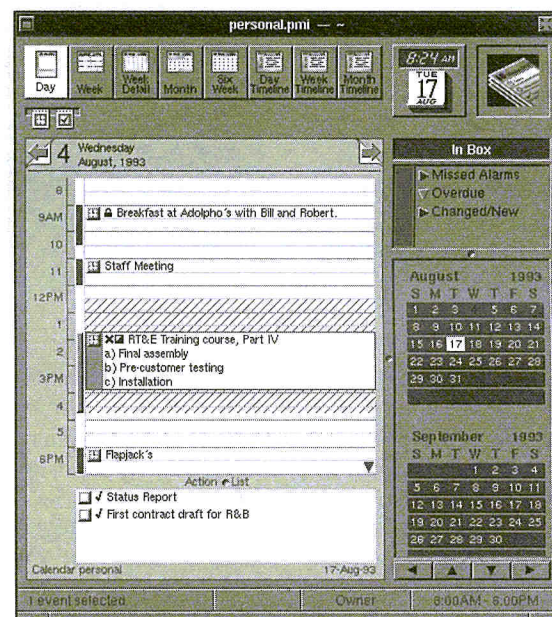
In addition to its own custom-built hardware, featuring machines from desktop to tower models, Continental sells a version of the Intel GX — a white computer that is strikingly similar to the discontinued NeXTstation. "We have the pre-beta release of the driver for its sound box, the new ATI drivers, and the new SCSI drivers. We stay on top of what's coming out and try to stay in front of everyone else," says Bacher. "We're not afraid to integrate something before it's officially part of the product."

This forward thinking is also evident in the decision to open a NeXT demo center in its Newington, Connecticut, office, which Continental hopes will become a regional hub for showcasing both NEXTSTEP in particular and object-oriented programming in general.

NeXT needs partners like Continental to get its software deployed in enterprisewide solutions, and through its expertise and aggressive approach, Continental is helping open doors that were formerly closed to NEXTSTEP. "Customers are telling us that they haven't found a vendor with a strong UNIX background who could bring to the table not only software knowledge but also thoroughly tested and developed hardware solutions. It seemed like a natural segue for us to take our skill set and put it on the NeXT platform." ■

by LEE SHERMAN

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## Friendly Fire

USER GROUP NEWS

THE RED GLOW OF THE SUN DISAPPEARED behind the darkened ridge of the Rocky Mountains as the capacity crowd settled into a lecture hall at the University of Colorado in Boulder to witness the Windows NT vs. NEXTSTEP Shoot-out.

As things turned out, it wasn't so much *High Noon* as *The Unforgiven*. Instead of a technical showdown based on benchmark-evaluation criteria, the audience witnessed side-by-side demonstrations followed by a provocative discussion of open-systems computing.

This event wasn't about confrontation. "The whole purpose of open systems is to bring hardware and software from different vendors together and combine them to fulfill a variety of needs," said Tim Miller, treasurer of the Rocky Mountain NeXT User Group (rmNUG) and consultant with Denver-based Resource Integration Associates. "In the future, we can expect any software to run on any hardware under

any operating system. In NEXTSTEP and developing products like Windows NT, we are witnessing this phenomenon being born."

The Shoot-out was organized by rmNUG in response to Steve Jobs's exhortation at Expo for NEXTSTEP users to reach out to new audiences and introduce NEXTSTEP and the open-systems trend to a group of people who had never before been directly exposed to them. The roughly 110 attendees were two-thirds PC users and one-third NEXTSTEP users. Though it was generally agreed that NEXTSTEP offered an advanced solution for those making the move toward open systems, the attendees also carried away a glimpse of a future in which the boundaries between software platforms will dissolve.

John Stoddard, Windows programmer and coauthor of *Inside Windows NT*, demonstrated the capabilities of the NT system. Although NT was billed as being

nearly identical to NEXTSTEP, questions raised on such issues as software licensing for networked environments, transferability of applications to other architectures, and remote logins revealed NT's troubling lack of a common UNIX heritage.

NeXT System Engineer Brent Loschen kept the NEXTSTEP presentation focused on the end-user perspective. Attendees from the PC world, many of whom had never before seen NEXTSTEP, found the system-level integration of native NEXTSTEP applications very appealing. Whereas Windows and NT applications need to be specifically enabled to communicate with one another, the innate familiarity between NEXTSTEP applications makes sharing information largely effortless.

"Windows NT has a long way to go to compete with the friendliness and functionality of NEXTSTEP," said one attendee. "Although some nice features were demonstrated regarding configuration and security, it seems that much of NT has to do with solving problems that simply don't exist for the NEXT-

STEP user."

"NEXTSTEP is tomorrow's technology today," Miller emphasized. "Whatever the OS of choice is in the years to come, it will look a lot like NEXTSTEP."

So were the uninitiated ready for this new vision? "Most people aren't ready to make a paradigm shift," Miller said afterwards. "They're not interested in technology for technology's sake. They need to link technology to what they're doing today, while keeping their eyes open to the skills they'll have to learn for tomorrow."

This message on NEXTSTEP and open systems hit the target for at least one PC user, who commented, "It seems operating systems are looking more and more alike. One can learn one operating system and apply 25 percent to 50 percent of that knowledge towards learning another. Although the casual user is still trying to learn DOS 6.0 and Windows 3.1, it's obvious that one day they'll need to learn NEXTSTEP, Windows NT, or some hybrid of the two." ♦

by LEANN COULTER

## Black Marl

ON THE

With all of the commotion about the demise of RightBrain, and all that NeXT may be Apple to replace Talig erPC, you'd think there'd been a sudden plunge in commodity prices. But prices for hardware are holding.

A survey of computer marketplace found people buying every kind of NeXT system between 50 percent and 100 percent of NeXT's original list price. In September (the month this issue went to press), the NeXTstations for sale ranged between \$2000 and \$3000. The NeXTstation Colors I was \$3100 and \$4000, two NeXT Turbos at \$3500, and the NeXTstation Turbo Colors at \$4000 to \$6000. A handful of high-end dimension systems (\$7000 and five '030 Cubes) also showed up.

One thread speculating on the possibility of upgrading existing systems to Motorola 68060. Those saying "not a chance."

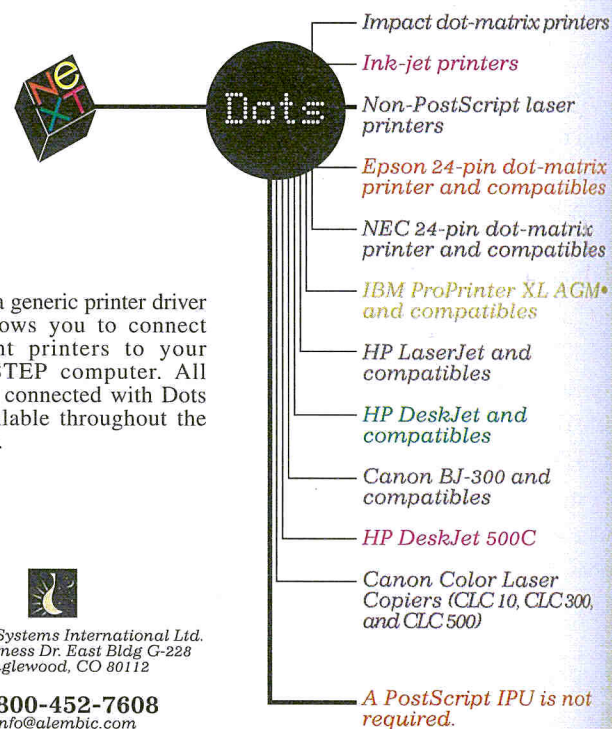
One reason for the surge in sales is the availability of NeXT had in September. Many posters were advertising systems as "factory new" in the original box.

Software also popular. The list: FrameMaker 3.0, \$100; Simion STEP 3.0, \$100; Simion There was a somewhat trade in fax modems (\$30-\$50) and printer cables (\$30-\$50) and drives (\$300-\$400, sold with NEXTSTEP empty magnesium C). (Anybody got a blowtorch?)

Just about the only netters were having with systems was getting the moved around: Several reported that systems aged. Perhaps as a result in the original boxes a slightly higher prices. ♦

by SIMSON L. GA

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## Black Market

O N T H E N E T

With all of the commotion on the Net about the demise of Appsoft and RightBrain, and all of the rumors that NeXT may be signing with Apple to replace Taligent for the PowerPC, you'd think there would've been a sudden plunge in NeXT commodity prices. But prices for black hardware are holding firm.

A survey of comp.sys.next.marketplace found people trying to sell every kind of NeXT system at prices between 50 percent and 80 percent of NeXT's original list price. During September (the month before this issue went to press), the Net saw 21 NeXTstations for sale priced between \$2000 and \$3000 (a single system was priced at \$1500), 11 NeXTstation Colors priced between \$3100 and \$4000, two NeXTstation Turbos at \$3500, and eight NeXTstation Turbo Colors priced from \$4000 to \$6000. A handful of NeXT-dimension systems (\$7500-\$8000) and five '030 Cubes (\$600-\$1950) also showed up.

One thread speculated on the possibility of upgrading existing '040 systems to Motorola's newly announced '060. Those in the know say "not a chance."

One reason for the recent upsurge in sales is the auction that NeXT had in September. As a result, many posters were advertising their systems as "factory new" and "still in the original box."

Software also popped up on the list: FrameMaker 3.0, \$250; NEXTSTEP 3.0, \$100; Simon Says, \$125. There was a somewhat less bustling trade in fax modems (\$100-\$300), printer cables (\$30-\$50), CD-ROM drives (\$300-\$400, sometimes bundled with NEXTSTEP 3.0), and empty magnesium Cube chassis. (Anybody got a blowtorch?)

Just about the only difficulty netters were having with selling their systems was getting the equipment moved around: Several people have reported that systems arrived damaged. Perhaps as a result, systems in the original boxes are fetching slightly higher prices. ♦

by SIMSON L. GARFINKEL



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NextStep Software (Installed)

#### QUALITY

Above all, a system from G.E.C. is quality. Very competitive pricing is just a little bonus. Our customers tell us that the reason they buy from us is they know the machine will work, and that if something happens to go wrong, a professional technician is going to make it right in a hurry.

G.E.C. has set its standard by insisting on quality components. These include NMB keyboards (used by Compaq) TEAC floppy disk drives (the industry standard) and faster 60ns RAM. Our customers take note of the little things like the Diamond series cases, quiet power supplies, the use of fan-cooled heat sinks on the CPU.

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Try dealing with a company where every salesman knows NextStep standards and every technician has built, loaded and tested NextStep compatibles. Our technicians have received training in NextStep, work closely with Next and with our customers on compatibility, and are involved in Next users groups.

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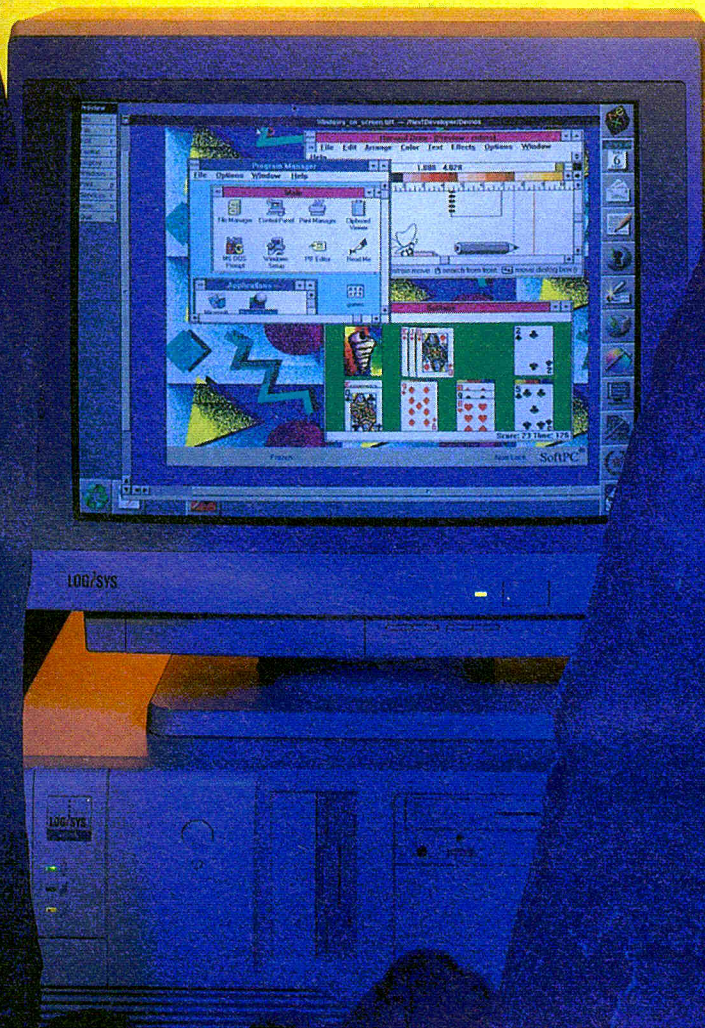
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NEXTWORLD

NEW  
IN BRIEF

David Pollack, Athena warrior-developer, was ordered by the Goliath U.S. District Court in October, as his suit for a writ of mandamus against the U.S. Court of Appeals for the First Circuit was dismissed. Pollack sought relief under the First Amendment against that court's decision in August that protected macro language from being included in Borland's spreadsheet products. As a result, Athena Design removed Lotus-macro compatibility from its Mesa spreadsheet. Athena Design: 617/731-1111.

Uptime Object Factory, shipping in September, is a databasePassword, a Preflight bundle that allows users to change passwords on Oracle and Oracle databases. The software is localized for English and German and will support other databases in the future, according to the Switzerland-based company. DatabasePassword sells for approximately \$60; a demo version is available on the Internet at [cs.orst.edu](http://cs.orst.edu). Uptime: 415/607; info@uptime.ch.

Williams Telecommunications extended its WilPak franchise service to Europe in October. The system is an extension of WilTel's fiber-optic private telecommunications network, which was designed over the past two years and operates under NEXSTEP. The network offers clients high-speed data and voice-communication capabilities, as well as cost-effective reporting and administration tools. WilTel: 918/588-1111.

Clusia was scheduled in February to release NoteAbility, a professional music-note-taking package. The software is designed to let users input notes via mouse action, keyboard, screen keyboard, and step-by-step and real-time entry from a keyboard or device. NoteAbility also accepts NeXT Mail and score. [CONTINUED ON PAGE 18]

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## NEWS IN BRIEF

David Pollack, Athena Design's warrior-developer, was defeated by the Goliath U.S. court system in October, as his motion for a writ of mandamus before the U.S. Court of Appeals for the First Circuit was dismissed without comment. Pollack sought relief under the First Amendment against that court's ruling in August that protected Lotus's macro language from being used in Borland's spreadsheet products. As a result, Athena has removed Lotus-macro compatibility from its Mesa spreadsheet. Athena Design: 617/734-6372.

Uptime Object Factory began shipping in September its DatabasePassword, a Preferences bundle that allows users to change passwords on Sybase and Oracle databases. The software is localized for both English and German and will support other databases in the future, according to the Zurich, Switzerland-based company. DatabasePassword sells for approximately \$60; a demo version is available on the archive cs.orst.edu. Uptime: 41/1/313-0607; info@uptime.ch.

Williams Telecommunications extended its WilPak frame-relay service to Europe in October. The system is an extension of WilTel's fiber-optic private-line telecommunications network, which was designed over the past two years and operates under NEXTSTEP. The network offers clients high-speed data and voice-communications capabilities, as well as custom reporting and administration tools. WilTel: 918/588-5752.

Ciusa was scheduled in December to release NoteAbility, a professional music-notation package. The software is designed to let users input notes via mouse action, keyboard, on-screen keyboard, and step-time and real-time entry from a MIDI keyboard or device. NoteAbility also accepts NeXT MIDI and score [CONTINUED ON PAGE 21]

## WordPerfect pulls plug on future NS support

by DAN RUBY

Orem, Utah — As part of a move to concentrate resources on a common code base, WordPerfect Corporation has told its NEXTSTEP customers that it will halt future development of WordPerfect for NEXTSTEP.

The company said it will issue in January a new release of WordPerfect for NEXTSTEP 1.0.1, which will fix bugs and improve support for internationalization. It also said that it will continue

to sell and support the product, which runs on Intel and Motorola NEXTSTEP systems, until January 1995.

It will, however, discontinue work on a NEXTSTEP version of WordPerfect 6.0, its current release for DOS, Windows, Macintosh, and other platforms.

"WordPerfect has enjoyed a good relationship with NeXT. However, the bottom line is revenue and resources. After a full evaluation, we concluded that we could [SEE WORDPERFECT, PAGE 21]

## Prime time for 3.2

by DAN LAVIN

Redwood City — NeXT was at press time on track to ship NEXTSTEP Release 3.2 for Intel Processors and Motorola hardware in the first week of November. Although it sports a few new features, 3.2 is primarily a more robust version of the initial Intel release, 3.1 and sports a new version of SoftPC, new drivers, and bug fixes. NEXTSTEP Developer 3.2 also includes initial support for Portable Distributed Objects (PDO).

"Swiss Bank is running betas of both 3.2 and PDO, and we're pleased with both. This is special because generally we are pretty brutal on operating systems. But NeXT has finally gotten a quality-control department," said Dwight Koop, executive director of information technology for Swiss Bank Corporation.

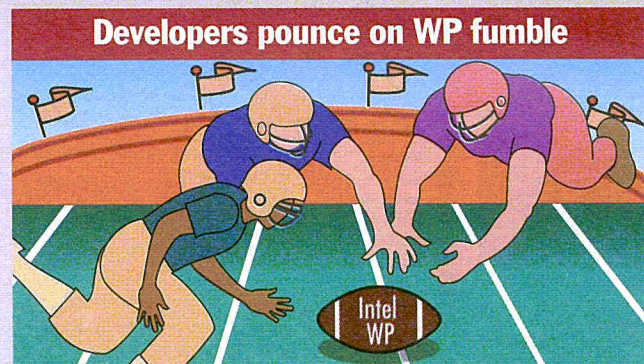
A demo version of the new SoftPC 3.2 for NEXTSTEP for Intel Processors is included on the CD-ROM for NEXTSTEP 3.2. It will

### NS 3.2 highlights

- 500 bug fixes
- SoftPC for Intel availability
- 32-bit color
- Increase in supported configurations
- Boot and sound driver APIs
- DriverKit
- Configuration process simplified

work for 30 days, after which users must purchase the \$249 product to continue using it.

Unlike previous versions, SoftPC 3.2 is not an emulator. It provides direct access to the Intel processor in the machine and lets users choose from two operating modes. Full-screen mode takes over the environment and runs at full-processor speed. Users can toggle between NEXT- [SEE 3.2, PAGE 18]



## Two writes, one wrong

by DAN RUBY

Write this up exactly right: Anderson Financial Systems (AFS) pulled a fast one when it announced its new word processor last month.

By announcing that it would use its newly acquired PasteUp page-layout program to spin out a \$199 word processor, WriteUp,

AFS threw a wrench in the works of the announced acquisition of another RightBrain product, ExactlyWrite, by Information Technology Solutions (ITS).

Thus, the battle for the low-end word-processing market now focuses on WriteUp and WriteStep from Minneapolis-based Ciusa, both [SEE WORD PROCESSING, PAGE 21]

## New DBKit on deck

by SIMSON L. GARFINKEL

Redwood City — NeXT's database-access kit is being rewritten for a future release of NEXTSTEP, according to developers who attended a closed meeting of NeXT's DBKit Advisory Board on October 11 at NeXT headquarters.

The new kit will be dramatically faster, more efficient, and easier to learn, sources said. It is also designed to store instances

of objects and arbitrary data in conventional databases, in addition to integrating NEXTSTEP with existing legacy applications. NeXT engineers told attendees that a redesigned database-accessing methodology will make DBKit more reliable and ease the debugging of complex client-server programs that use it.

According to sources present at the meeting, developers complained that the existing DBKit version could be improved for developing programmatically controlled database systems. The DBKit objects were optimized for doing things like fetching complete data sets instead of doing selective queries or incremental database updates. The new release will address these issues, the sources said.

No date has been disclosed for the new release. NeXT declined to comment on the meeting.

## Canon settlement complete

by DAN LAVIN

Redwood City — In a deal closed on October 7, NeXT's long-term debt to Canon will be reduced in exchange for Canon's increased ownership in NeXT and the rights

to all NeXT hardware technology. Powerhouse, a start-up company with ties to Canon, has acquired the technology and hired several former NeXT hardware-engineering employees.

"The debt was sizable. It is im-

portant as a milestone for NeXT to have closed the deal so we can move forward. The restructuring is behind us," said NeXT CFO Dominique Trempont.

According to Trempont, Canon acquired [SEE CANON, PAGE 18]

ment office: (510) 339. In Los Angeles: 926-0849. In New ax (201) 816-0867.

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## Dazzling charting packages coming on line

by ELIOT BERGSON

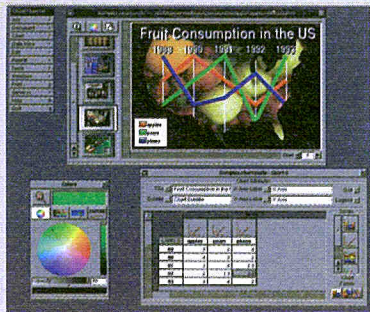
Business users will have more to choose from than different types of graphs and charts for their documents, as three new charting packages for NEXTSTEP hit the market.

BLAICKSMITH has shipped CHARTSMITH 1.0, a "presentation-quality charting and graphing package," according to the company, with ease-of-use features such as templates and drag-and-

drop capabilities. The package also supports Services and Object Linking, and sells for \$495, with an educational price of \$99.

"What we liked most was the paste-and-link feature. The ability to constantly update is critical to us," said Henry Krempel, an independent consultant who is designing and implementing applications for financial trader Nicholas Appelgate.

Watershed Technologies in October announced GraphRight 1.1, which also features Object Linking to and from its "presentation graphing application," the company said. The \$399 package (\$199 educational) also comes with a distributed-object API, which allows developers to build data-visualization capabilities into



CHARTSMITH brings drag-and-drop images and a choice of graph types to business graphics.

their applications.

And Xanthus International in October announced the beta release of its Graphity 1.0 "business-graphics application," according to the company. It can be found on the archive sics.se/pub/next/beta\_fat and will run in demo mode for ten minutes.

BLAICKSMITH: 703/524-6147; chartsmith@blcksmth.com. Watershed: 508/460-9612; graphright@watershed.com. Xanthus: 46/8/635-3000; xanthus@xanthus.se.

## Slides from images in any application

Kentfield, CA – Moving into territory commonly held by service bureaus, GS Corporation in October began shipping eXTRASLIDE, which uses a Polaroid film recorder to create slides directly from images.

"What's really nice [about eXTRASLIDE] is that you can use it right from the Print panel of any application," said Daniel Wasserman, who uses the app at the New York-based service bureau Light Printing.

"So far, I've been pleased, but there are a few kinks that will need to be worked out."

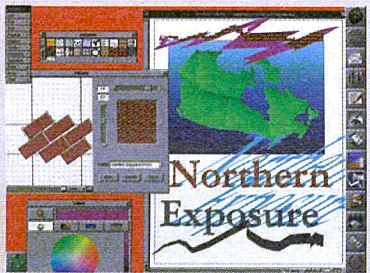
As a stand-alone application, eXTRASLIDE lets you alter an image, set the slide's background color, and print to film.

eXTRASLIDE retails for \$995. GS Corporation: 415/257-4700; joe@goldleaf.com.

## Create 2.0 offers new text effects, more speed

by PAUL CURTHOYS

Albuquerque, NM – Stone Design announced in October that it would begin shipping Create 2.0, a new fat-binary release of its drawing program that contains substantial feature enhancements.



Create 2.0 now allows users to edit and add new patterns in a special window.

Users can now edit the shape of text or fashion custom patterns that fill shapes, text, and other objects.

"The best thing Create [2.0] has, its forte, are the text effects," said Paul Buroker, a beta user who works at Creative Technologies, an Evansville, Indiana-based VAR. "With other apps, they're a lot more difficult to do. The only thing I'd like to see added would be more 3-D effects – that would be the ultimate."

Buroker also noted that this release is a lot speedier than previous versions, especially during launching and printing.

Other new features include a paintbrush tool, the ability to create multiple-page drawings, hot links, and filter support for GIFs and other image types.

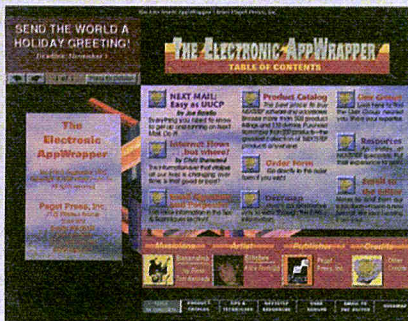
Create 2.0 lists for \$495, or \$99 for registered users.

Stone Design: 505/345-4800; info@stone.com.

## AppWrapper #3 ships

Seattle, WA – Continuing its high-tech direct-marketing service, Paget Press in October shipped the third edition of the *Electronic AppWrapper*, a CD-ROM that showcases almost 500 NEXTSTEP products, including demo versions of applications, fonts and sounds, tips and tricks, and user-group and consultant listings.

More than 100 of the products come preloaded, so if you decide to purchase one, you can call Paget, pay for a license number, and start using it right away.



With CD-quality music in the background, users can browse the AppWrapper's offerings in a variety of ways.

A one-year subscription to the *Electronic AppWrapper* is available for \$48. Paget Press: 206/448-0845; eaw@paget.com.

## InTouch addresses Rolodex market

by PAUL CURTHOYS

Milwaukee, WI – The electronic address-book market, long dominated by Sarrus Software's SBook, heated up in October with the release of InTouch from SmartSoft.

Beyond organizing address information, InTouch tracks and manages correspondence. From a listing of contact information, users can directly access any correspondence they send, according to the company.

InTouch also allows a user to group addresses and send a mass

e-mail or fax message.

"I have to confess, I see it as a work-in-progress," one beta user said. "Some features need to work better, but it's 95 percent there." He added that he preferred InTouch over SBook.

InTouch can import from SBook's ASCII format and export to WriteNow and WordPerfect for mail merging. InTouch also provides customization options.

A single-user copy costs \$99. SmartSoft can be contacted at 414/964-8864; smartsoft@parsec.mixcom.com.

### Canon

[FROM PAGE 17]

the rights to all NeXT hardware designs, hardware-design software, and related equipment. Over a period of time, there will be some conversion of debt into equity in NeXT as well, but it will only slightly dilute the equity of current investors, Trempont said.

Exact figures of the transactions were not disclosed by either NeXT or Canon, but some portion of the long-term debt will remain on NeXT's balance sheet. As part of the deal, Canon also acquired exclusive distribution rights for NEXTSTEP software in seven Asian countries.

NeXT arranged a \$55-million credit line from Canon in June 1992. According to sources, a substantial amount of the line was drawn down and converted into a debt to Canon. Originally designed to see NeXT through its

public offering, the money became a significant debit on NeXT's balance sheet, impairing NeXT's ability to find additional financing. Further, sources claimed that the money came with severe constraints and performance requirements from Canon, which NeXT failed to meet.

Steve Jobs extended a personal \$10-million credit line at the same time Canon did. NeXT would not comment on whether it drew from this line or how debt from it is being handled.

Powerhouse has been operating as a separate entity for several months in NeXT office space under the direction of Jon Rubinstein, former NeXT vice-president of hardware. It will move to an undisclosed location outside of NeXT's facility in December, according to Trempont. Rubinstein declined to discuss Powerhouse.

### 3.2

[FROM PAGE 17]

STEP and DOS using a hot key.

SoftPC will also run as a window within NEXTSTEP. Although slower than full-screen mode, this mode utilizes NEXTIME technology, which NeXT provided to Insignia, to poke a hole through Display PostScript, significantly increasing performance.

According to NeXT, SoftPC will not run some Windows programs that require enhanced-mode operation, such as FrameMaker's new version. SoftPC also has trouble with some graphical DOS programs and will run VGA-based programs only in full-screen mode.

Enhanced driver support in 3.2 greatly expands the number of supported configurations. The ATI Graphics Ultra Pro and S3 805 drivers have been enhanced, and the S3 928 driver is now supported. A set of APIs lets third parties write dynamically loadable boot

drivers and sound drivers. Full 32-bit color and a variety of sound cards are also supported.

Although the PDO system is a separate product, NEXTSTEP 3.2 provides crucial support for it. According to NeXT, the PDO system was on track to be released in mid-November.

The DriverKit in the developer version provides tools to simplify the task third parties face when writing additional drivers that let hardware work with the OS. The new release also includes enhancements to the HeaderViewer and ProjectBuilder applications.

NEXTSTEP 3.2 costs the same as 3.1: \$795 for the user version and \$1995 for the developer. Upgrades are free to users who registered 3.1 before October 31 and cost \$195 and \$495 for purchasers of earlier versions. Purchasers of the Evaluation Kit must pay full price to upgrade.

## NEXTSTEP

by ELIOT BERGSON

New York – Dow Jones, one of the leading information providers to the financial industry, signed deals with NeXT and an unnamed party developer to begin a STEP pilot project to develop software.

The move was fueled by Jones's interest in Hewlett-Packard technology and representation of Object Enterprise story," one source said. Companies in June signed contracts for HP servers, workstation infrastructure improvements worth \$80 million worldwide.

The NEXTSTEP development calls for a 50-seat development project that could have 500 users next year. Dow Jones has over 100,000 customers worldwide.

In the initial phase, the unnamed party developer will build a prototype risk-analysis product that takes feeds and performs calculations, which are always different for each customer, a source said.

"I think Dow Jones will organize global development teams. They will be on first companies to do development, and if the common spec and an obsequious, they should be put together solutions for in different locations," a source said.

The ultimate goal of the project is a suite of applications that make it easier for users to load and use Dow Jones data feeds, which include

## COSE issues

by CLAIR WHITMAN

San Jose, CA – Common Software Environment (COSE) sponsors laid down the major piece of the COSE here today by delivering an implementation code of the Common Desktop Environment graphical desktop environment and programming interface designed to run on multiple operating systems across multiple hardware platforms.

Representatives from Hewlett-Packard, IBM, Novell, Sun and the Santa Cruz Operation unveiled the CDE technology reiterated their commitment to CDE as the interface standard for all five companies.

"This is a milestone along



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grade. ◆

## NEXTSTEP feeds Dow Jones appetite

by ELIOT BERGSON

New York – Dow Jones Telerate, one of the leading information providers to the financial-services industry, signed deals in October with NeXT and an unnamed third-party developer to begin a NEXTSTEP pilot project to develop news-feed software.

The move was fueled by Dow Jones's interest in Hewlett-Packard technology and represents "the first Object•Enterprise success story," one source said. The companies in June signed contracts for HP servers, workstations, and infrastructure improvement reportedly worth \$80 million.

The NEXTSTEP deal reportedly calls for a 50-seat development project that could expand to 500 users next year. Dow Jones has over 100,000 customers worldwide.

In the initial phase, the third-party developer will build a prototype risk-analysis product that takes feeds and performs analyses, which are always different for each customer, a source explained.

"I think Dow Jones will try to organize global development teams. They will be one of the first companies to do distributed development, and if they have a common spec and an object repository, they should be able to put together solutions for clients in different locations," a source said.

The ultimate goal of the plan is a suite of applications that will make it easier for users to download and use Dow Jones Telerate data feeds, which include every-

thing from stock and futures quotes to on-line copies of the *Wall Street Journal*.

"Dow Jones wants to add value for its clients. They're in the data business. What they're doing is giving away cameras to sell the film," another source said. Software developed under the project will be designed to increase

demand for the company's data feeds.

"The time value of information is enormous. Professional money managers have millions riding on information, and they're willing to pay for services and information. You'll be seeing more subscription pricing for software," another source explained. ◆

## Book takes harsh view of NeXT

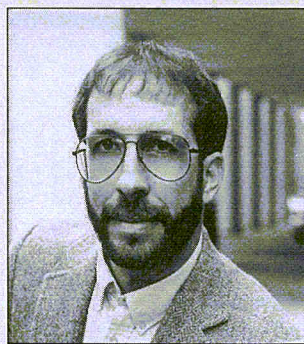
by DAN LAVIN

New York – An unauthorized business history of NeXT by Randall Stross, called *Steve Jobs and the NeXT Big Thing*, was scheduled to be released by Macmillan Publishing under the Atheneum imprint on November 29.

The book traces the NeXT story from its roots in Apple Computer through the discontinuation of hardware in the February. It includes detailed accounts of NeXT's relationships with Canon, Businessland, and IBM, as well as analyses of NeXT's sales and financial results.

"I found it interesting because I have been following Steve Jobs for several years, and there seems to be a lot of good information about him in the book," said Terry McDonald, editor in chief of *Sports Afield* magazine and former editor in chief of *Esquire*, who read a preview copy of the book.

Stross is a professor of international business at San Jose State University and has been working



San Jose State University Professor of international business Randall Stross.

on the book for the past three years. Rebuffed in his attempts to work directly with NeXT, Stross relied on interviews with former NeXT employees, some sources inside the company, and published media reports about NeXT. There is also substantial coverage from the perspective of Sun, NeXT's former arch rival.

The 352-page book will be issued in hardback for \$24. NeXT declined to make any comment about the book. ◆

## COSE issues desktop specification

by CLAIR WHITMER

San Jose, CA – Common Open Software Environment (COSE) sponsors laid down the first major piece of the COSE puzzle here today by delivering sample implementation code of the Common Desktop Environment (CDE), a graphical desktop environment and programming interface designed to run on multiple operating systems across multiple hardware platforms.

Representatives from Hewlett-Packard, IBM, Novell, SunSoft and the Santa Cruz Operation unveiled the CDE technology and reiterated their commitment to CDE as the interface standard for all five companies.

"This is a milestone along the

open systems road . . . It represents the COSE effort at its best," said Don McGovern, vice president of corporate strategy for Novell.

The CDE specification includes technology from HP's Visual User Environment, IBM's Common User Access and Workplace Shell; SunSoft's DeskSet and ToolTalk interapplication messaging; Novell's NetWare client software; USL's UNIX SVR4.2 desktop manager and scalable systems; and Open Software Federation's Motif Toolkit and Window Manager.

With its proprietary user environment, NeXT has expressed no interest in the CDE standard, although the company is working with HP to provide some interoperability with CORBA, an object-services standard being devel-

oped separately from CDE by COSE participants.

The specification – known as Specification 1170 – will be submitted to the X/Open standards committee at the end of the year and is expected to pass the fast track process by the middle of next year. The CDE code released today represents "99 percent" of the full capability of the standard. When finally approved, the standard will be renamed UNIX, using the trademark transferred from Novell to X/Open Company in October. The UNIX trademark was formerly held by AT&T Bell Laboratories. ◆

Clair Whitmer is the U.S. correspondent for the IDG News Service.

## Power Tools



### MetroTools 2.1

◆◆◆◆ NeXTWORLD Oct. '93

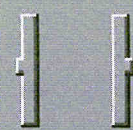
A set of utilities containing the most powerful and versatile Dock Extender for NEXTSTEP, a Screen Saver with screenlock and multi-module support. The FontInstaller converts Mac fonts. Also a File Locator, Achiver and Sound Importer. ■ \$89/ 69 edu



### MetroKeys

new NEXTSTEP product

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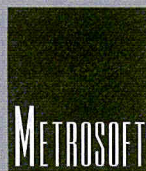
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Circle 28 on reader service card



## B U S I N E S S   N E W S

## ASI moves to fill gap in NeXT software

by LEE SHERMAN

Denver — Alembic Systems International (ASI), best known for distributing European-produced software titles in the United States, is expanding its charter to become a one-stop shop for all NEXTSTEP software, training, and support.

"People who are doing the mission-critical stuff also have a need for word processing and spreadsheets," said John Pierce, vice-president and general manager of ASI. "They'll need productivity apps and they'll want to call one place to get them."

According to Pierce, NeXT's focus on custom applications has left many vendors of shrink-wrapped applications without a viable means of distribution. "There's some frustration out there," he said. "This market hasn't been paid a lot of attention by Ingram or Merisel, and we expect it to explode."

ASI will also offer European distribution to American software developers through its London office. The company's affiliation with a language school located in Brazil is expected to give its partners a head start in localizing their

applications. Localization will be offered in the basic European languages, including French, German, Spanish, and Portuguese, starting at the beginning of next year.

Julie Saffren, NeXT's manager of developer relations, applauded ASI's new direction. "I think Alembic is providing services our market needs; for instance, getting innovative European products exposed in the United States, in addition to offering telesupport, training, and localization services for third-party applications." ♦

## WiTel, NeXT in technology dispute

by ELIOT BERGSON

A dispute has arisen between the Advanced Technology Group of Williams Telecommunications (WiTel) and NeXT over use of technology involved in distributed-object development.

"We are having discussions on software-ownership issues, and we're working toward an amicable resolution. Our aim is to have a win-

win for both companies," said Dominique Trempont, NeXT CFO.

A spokesman for WiTel said that because it was "a matter that's in litigation, we can't comment."

According to sources, the dispute arose when the WiTel group, which has used NEXTSTEP over the past two years to develop an Asynchronous Network Transfer (ATM) mode network and administration tools, wanted to distribute its "remote object facility" on the Net as a competing standard to NeXT's work in distributed objects. Both systems allow software to be easily developed and integrated across a large network of users.

WiTel developed its system ahead of NeXT's but had signed nondisclosure agreements, one source said. NeXT's announced spec for Portable Distributed Objects is different from WiTel's remote object facility.

"The ATM system won't plug into or share objects with applications built outside the ATM network. [WiTel] will be an island in a sea of distributed objects," a source said. ♦

## HSD back to future

by PAUL CURTHOYS

Sunnyvale, CA — Citing a "big void" in the availability of scanner hardware, HSD is once again offering a line of scanners for computers running NEXTSTEP.

The company's return to hardware was prompted by NeXT's recent leaps in sales, explained Dave Peter, company president. "First and foremost, NeXT is making it. Big corporations are buying NEXTSTEP in large numbers," he said.

Peter added that re-entering the hardware market was one of his

goals when he returned to lead HSD in October after a five-month hiatus. "It's a great segment of the market, very profitable," he said. "We've been profitable in my first month back, and we'll be profitable next month, too."

Looking ahead, HSD is pursuing several new ventures, according to Peter. In response to NeXT's new marketing strategy, HSD will be unbundling key components of its apps and licensing them as objects for scanning, imaging, document management, and compression. ♦

## Fly-boy lands at ITS

by DAN RUBY

Chicago — Bill Thomas, formerly the chief information officer with an advanced technology organization in the U.S. Air Force, one of NeXT's prime government installations, retired from military service and joined Information Technology Solutions (ITS) as chief operating officer.

"I have seen the benefits that NEXTSTEP can provide an orga-

nization. Now I have an opportunity to help build a company to extend those benefits to the business sector," Thomas said.

ITS is a Chicago-based consulting, services, and software-development company with 20 employees.

Thomas, 43, said the Air Force organization remains fully committed to NeXT. "It has staked its operational capability on the success of NEXTSTEP," he said. ♦

## Hardware vendors up offerings for 3.2

by LEE SHERMAN

Expanded driver technology in NEXTSTEP 3.2 is opening a new world of system configurations and peripheral-card support from major PC vendors.

• NEC is pursuing a three-pronged strategy that will eventually result in NEXTSTEP being "hot-loaded" on laptop, tower, and desktop models, according to Rob Markowich, senior major-account specialist.

Initially, NEXTSTEP will be deployed on desktop models. NEC is offering two systems, one configured for users and one for developers, both built around the company's Image 3 series.

Although NEXTSTEP was seen at NeXTWORLD Expo running on NEC's Express 4/66, Image 2, and Versa notebook computers, even Markowich called the implementations a "kludge." The systems "worked but they weren't performance dazzlers," he said.

In contrast, the Image 3 series has been designed to differentiate

NEC from the competition by including features that are specifically designed to exploit NEXTSTEP. "We've done a lot of things with I/O and bus performance. We've enhanced video performance through local bus. Combine those two features with high-performance IDE drives, and you've got a very high-performance machine," said Markowich.

The developer configuration consists of an Image 4/66 with a 256KB cache, 32MB RAM, 1MB VRAM, a 540MB IDE drive, and a CDR triple-spin CD-ROM drive. The user configuration has 16MB RAM and a 420MB IDE drive but is otherwise identical. Both systems are EnergyStar compliant and are offered with the ProAudio 16 sound card. The systems are still limited to 1024-by-768 16-bit resolution.

• Dell has been working closely with NeXT on selecting graphics cards that support new drivers. "When you get into the Intel arena, the question becomes what works with what," said Tom Hartsell,

business solutions manager for advanced systems at Dell.

NEXTSTEP 3.2 includes a driver for the #9 GXE local-bus video card incorporated into the Dell Dimension XPS, a machine Hartsell refers to as Dell's "Gatewaybuster." The card can deliver 24-bit color at 1024-by-768 resolution. Because Dell builds every machine to order, exact configurations were not available, but Hartsell said the company will offer customers standard configurations based on NeXT's recommendations. Besides preinstalling NEXTSTEP, Dell will offer systems that include additional software.

• A driver for Compaq's business-audio sound card will let purchasers of Compaq's Deskpro M family of '486 and Pentium machines take advantage of CD-quality sound, according to Brian Chladny, integration manager at Compaq. At press time, it was unclear whether 3.2 would include a driver for the Adaptec 6260 SCSI chip, which is the basis of Compaq's optional SCSI card. ♦

## FIRST-LEVEL SUPPORT



If resellers are to evangelize the benefits of NEXTSTEP to their customers, they need to be able to get fast, accurate answers from their own suppliers.

Ingram Micro is a major distributor of NEXTSTEP, providing first-level support to VARs and resellers; the company won't even answer a question like "What's NEXTSTEP?" until you've been validated as an authorized dealer.

With the help of a friendly reseller, the Sleuth infiltrated the Ingram Micro sales department. The sales representative read a flowery description about NEXTSTEP and was able to quote prices off a price list. While it

was easy enough to purchase the OS itself, the goal of filling your shelves with a full line of third-party shrinkwrapped productivity software remains elusive.

When asked about additional software, the salesperson said that NEXTSTEP came with several bundled apps. She couldn't provide any information on other apps, except to offer WordPerfect 5.1 for UNIX (which doesn't run under NEXTSTEP) instead of the NEXTSTEP version.

If the NEXTSTEP market is to expand, distributors need to remember that resellers are customers too and provide service that goes beyond mere rote order-taking.

*Each month, the Sleuth will look at a different aspect of NEXTSTEP distribution.*

B R I E F  
C o n t i n u e d

files, as well as files Writer, a popular M program. The fat-bi age will have a retail \$499 and an education of \$299, according to pany. Ciusa: 612/8 info@cuisa.com.

**Digital Tool Works** ber shipped a multi tecture-binary versic tionBuilder, its WY technical-equation e sion 3.1 is available f NEXTSTEP resellers NeXTConnection a Press; contact Digital site-license purchase grade information. A tional demo versior found at the FTP sites and sonata.cc.purdue al Tool Works: 617. info@dtw.com.

**Sirius Solutions** in Oc nounced new pricing date to its CheckSum program. Version 1. expenses, income, pro cash, and provides i statements and balai for the single user or s ness owner, accordir company, and costs \$9 cational price of \$75 been set. A demo versio able from cs.orst.edu 415/957-9044; check ius.com.

**Pinnacle Research** ha SunOS and ULTRIX s the list of servers supp its Transfer connectiv tion. The \$249 pack signed to provide re cess to NeXTmail and command execution o ety of UNIX servers, e customized connectiv tions. A demo versio fer can be found on th edu archive site. Pinna 529-1135; transfer@p

**Cub's Systèmes** has ch name to Intuitive Tech The developers of the Window X11R5 solut intuitiv'3d 3-D modele be reached at 33/1/47.0 info@cubx.com.

**Alpine Computing** Mic nounced in October its STEP for Intel Processc uct catalog. The catale workstations from variu fufacturers as well as NE user and developer vers selected third-party so Alpine: 801/268-8877 magnusson.uuco.



B R I E F S  
C o n t i n u e d

files, as well as files from Note-Writer, a popular Mac notation program. The fat-binary package will have a retail price of \$499 and an educational price of \$299, according to the company. Ciusa: 612/822-1604; info@ciusa.com.

**Digital Tool Works** in September shipped a multiple-architecture-binary version of EquationBuilder, its WYSIWYG technical-equation editor. Version 3.1 is available from several NEXTSTEP resellers, including NeXTConnection and Paget Press; contact Digital directly for site-license purchases and upgrade information. A fully functional demo version can be found at the FTP sites [cs.orst.edu](http://cs.orst.edu) and [sonata.cc.purdue.edu](http://sonata.cc.purdue.edu). Digital Tool Works: 617/742-4057; info@dtw.com.

**Sirius Solutions** in October announced new pricing and an update to its CheckSum accounting program. Version 1.1 tracks expenses, income, property, and cash, and provides income statements and balance sheets for the single user or small-business owner, according to the company, and costs \$95. An educational price of \$75 has also been set. A demo version is available from [cs.orst.edu](http://cs.orst.edu). Sirius: 415/957-9044; checksum@sirius.com.

**Pinnacle Research** has added SunOS and ULTRIX systems to the list of servers supported by its Transfer connectivity solution. The \$249 package is designed to provide remote access to NeXTmail and files, and command execution on a variety of UNIX servers, as well as customized connectivity solutions. A demo version of Transfer can be found on the [cs.orst.edu](http://cs.orst.edu) archive site. Pinnacle: 602/529-1135; transfer@pri.com.

**Cub's Systèmes** has changed its name to Intuitive Technologies. The developers of the Cub'X-Window X11R5 solution and intuitiv'3d 3-D modeler can still be reached at 33/1/47.08.74.40; info@cubx.com.

**Alpine Computing Microage** announced in October its NEXTSTEP for Intel Processors product catalog. The catalog offers workstations from various manufacturers as well as NEXTSTEP user and developer versions and selected third-party software. Alpine: 801/268-8877; kris@magnusson.uuco.

**Word Processing** [FROM PAGE 17] due to ship before the end of the year. Until now, the only shipping word-processing program for NEXTSTEP for Intel systems has been WordPerfect, but the company at press time announced it will phase out support for its NEXTSTEP product. Another high-end option, Pages, remains in beta testing.

After first announcing on October 1 that it would acquire ExactlyWrite, ITS dropped out of the word-processing race less than one month later.

**WordPerfect** [FROM PAGE 17] not justify continued development," said Nathan Hatch, product marketing manager for WordPerfect.

"We are naturally disappointed by WordPerfect's decision, but we have applications such as Pages and WriteUp (see "Two writes, one wrong") that will support the WordPerfect file format and provide customers with native word processing on NEXTSTEP," said Julie Saffren, NeXT's manager of developer relations.

In phasing out of the NEXTSTEP market, WordPerfect joins the list of cross-platform software

developers, including Lotus and Adobe, who have reversed their early commitment to NeXT. "This is a blow to cross-platform information sharing under NEXTSTEP. What it does is make SoftPC that much more significant," said Jeff Kwam, associate director of information technology for Swiss Bank Corporation (SBC) in Chicago.

Besides its NEXTSTEP systems, SBC manages a variety of other personal-computer and workstation environments. WordPerfect is the standard word processor on all platforms in use at SBC, Kwam said.

October (see "Two developers bow out," *NeXTWORLD Extra*, November 1993). "I had the option to do the same thing [create a word processor out of PasteUp], but decided that adopting the NeXT Text object was the faster route to developing a low-end word processor."

AFS said that WriteUp will include many of PasteUp's innovative features, including automatic text runaround, a page navigator, and zoom controls. Ciusa's WriteStep features a tool bar including 36 common functions and comes

with reference tools such as a thesaurus, quotation library, writing guide, and rhyme dictionary. WriteUp is priced at \$199 with discounted academic and multiple-user pricing. WriteStep is listed at \$149.

Both companies expect to ship in December and are seeking pre-orders, but AFS has added a twist. If WriteUp fails to ship by December 31, AFS will rebate \$1 per day to early buyers until it does. In a separate promotion, WriteUp is included free with purchases of PasteUp until December 1.

## Companies go after Image

by PAUL CURTHOYS

Now that Appsoft is officially a footnote in NeXT history, two other software developers are lining up to seduce Appsoft Image users.

Pinnacle Research and benchmark Developments are offering special deals to Image users.

For \$195, Image users can switch to benchmark's TIFFany image-editing package. If users prefer Pinnacle's WetPaint, that

company is offering a similar deal for \$149. Pinnacle will also throw in a copy of Inspected by: Pinnacle, its set of Work-space Manager file inspectors.

To receive these prices, both companies require you to prove that you purchased Appsoft Image.

benchmark Developments can be reached at 606/231-6599; info@bmd.com. Pinnacle Research can be contacted at 602/529-1135; info@pri.com.

## Calling all droids: Lt. Sullivan needs help

**L**t. Sullivan's life is an exercise in information overload: Agency field notes and analyses, commercial news feeds, Net news, and countless other streams of essential digital bits are available at his weary fingertips. Filtering out the meaningful nuggets from the megabytes of useless stuff takes up hours each day. He's often felt that he needs an intelligent electronic assistant to take the drudgery out of information gathering.

Now he may have a choice of such agents in a pair of applications under development at Millennium Software and IT Solutions. Millennium's intelligent news reader, code-named Hyperion, provides "droids" that scan and clip from data streams according to complex search criteria. Results are posted to e-mail, a live news window, or regular briefing reports. You may recall that Millennium chairman Jayson Adams developed NewsGrazer, which he left behind when he departed NeXT a few years back. Hyperion will also allow users to create their own internal bulletin boards and conferencing groups.

Meanwhile, ITS is making progress on its all-encompassing groupware program, code-named Tempest. Tempest has the tools to replace mail, Digital Librarian, and the File Viewer in one fell swoop. Tempest's focus is on providing an enterprisewide groupware solution, à la Lotus Notes, including more help for Sullivan in the form of news-filtering agents. (In an unrelated move, ITS has agreed to acquire Perennial Software's document-management application, which it is readying for shipment in early 1994.)

One problem: Both apps, along with Pangea Corporation's MindShare, may be treading on territory NeXT wants to reserve for its own future groupware product.

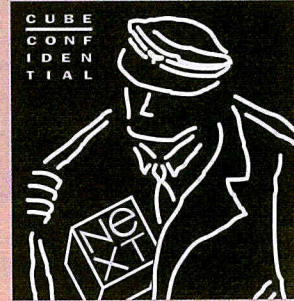
**N**one of these developments come too soon for Sullivan, who's had his case of information overload this month made worse by *Fortune* magazine's late hit on Steve Jobs's management style and Randall Stross piling on in his NeXT Big Thing book. *Fortune* dredged up some tired old stories in naming Steve as one of the seven toughest corporate bosses. Stross also neglected to seek insider perspective, including such as could be provided by this columnist. Actually, Cube Confidential is cited on several occasions, but Stross didn't bother to follow up. The truth is he found all the ammunition he needed to prove his thesis from interviews at Sun Microsystems, hardly a bastion of neutrality.

The final item of misinformation appeared in the September 29 issue of *USA*

*Today*. In an article entitled "Jobs may take NEXTSTEP to IBM," the reporter concluded that NeXT "has been talking with IBM about offering an operating system designed by NeXT to IBM customers." Is it true? Well, yes, if you mean selling NEXTSTEP for IBM-labeled PCs. But that's hardly headline news.

Despite the prospect of big sales to Barclays Bank and Linklaters & Paines, the NEXTSTEP community in the United Kingdom is not a big happy family. One of the VADs there has been bypassing dealers and selling directly, undercutting NeXT's efforts to build a dealer channel in the U.K. The good news in the U.K. is the hush-hush deal to ease migration from Wang systems to NEXTSTEP, which is a critical piece for both customers. More than a simple rip-out-and-replace, the two systems will evidently work together during a transition.

## Lt. Sullivan



**S**teve Jobs's rescue mission to Fidelity in Boston failed to convince the company to reverse its decision to deploy its retail brokerage system under Windows NT. But shortly after that, a swing with Warren Weiss to Guadalajara evidently netted a major NEXTSTEP commitment from one of Mexico's leading financial institutions.

More good news is the early indication that Grant Thornton, which is among the top ten computer-consulting firms in the U.S., is set to join NeXT's new Object Channel. Also, keep an eye on NCR, which is getting ready to announce an agreement to support NEXTSTEP on its enterprise systems.

All of the major hardware OEMs are fighting it out for sales to NeXT's major customers. Now you can chalk up a

win for ALR, which signed a contract with NationsBanc-CRT to supply the trading firm with NEXTSTEP PC systems.

Finally, this riddle: If you sell several hundred boxes of Mathematica at a public auction on an "as-is" basis as part of a larger lot that sold for \$4000, whose fault is it? According to NeXT legal, it seems to be the buyer's fault. Sullivan hears that Dancing Bear is being sued in court to prevent it from giving away the "not-for-resale" copies that NeXT sold.

Disappointed you can't easily upgrade your bargain-basement PIXY NEXTSTEP 3.0J to 3.1J? Let Sully upgrade your glass NeXT mug to a ceramic Lt. Sullivan mug for an insider tip. Leave him voice mail at 415/978-3374 or e-mail [sullivan@nextworld.com](mailto:sullivan@nextworld.com). RSA public key available upon request.



# Phase Changes

## FROM THE GLEAM IN THEIR EYE TO THE HANDS OF THEIR USERS, HOW IS MANAGERS ARE IMPLEMENTING NEXTSTEP

It has now been almost two years since NeXT honed in on its target market of mission-critical information systems. Many of the early corporate sites that adopted NEXTSTEP to develop strategic custom applications have now reached the stage of deploying the software to hundreds, even thousands, of user seats.

Many more are actively evaluating NEXTSTEP, while others are in the process of building object libraries and assembling their applications. This is a useful time to take a close look at the way early corporate adopters are going about the process of implementing NEXTSTEP.

First, consider the reasons that information-systems strategists are receptive to NeXT's message. In the 1990s, businesses are looking to information technology, especially software, to change the competitive alignment in their industries. Most businesses are also at a transition point in the life of their computer systems. They are moving from the disjointed world of back-office mainframes and desktop personal computers to the promised land of distributed client-server computing.

As a result, everything in software – operating systems, databases, development tools, applications – is up for grabs. In the operating-system arena, the basic requirement is a 32-bit multitasking system, whether it be Windows NT, OS/2, or any flavor of UNIX.

NEXTSTEP fits well with the client-server model. It runs on industry-standard hardware platforms and offers the unique advantages of the best object-oriented development tools available. For companies in competitive industries that are facing systems transitions anyway, considering NEXTSTEP is no longer a far-out alternative but rather a straightforward business case.

That gets NeXT in the door. Ramping up to full-scale deployment can take as long as three years, with decision points at several stops along the way. First, companies bring in a few systems for evaluation and prototyping. If all goes well, the company may commit to a large purchase, but the vast majority of seats are not actually purchased until the successful completion of the development phase.

From NeXT's point of view, the sales cycle is a straight correlation between time and number of seats. A sale of 50 seats might take three months, but a corporate rollout of 1000 seats takes two years or even longer. NeXT cites three sales case studies (see chart) that show an average of about 30 months from first contact to deployments in the high hundreds.

To get a sense of the experiences customers are having as they move through the NEXTSTEP cycle, *NeXTWORLD* spoke to managers at a selection of major NeXT customer sites. We also prepared our own unscientific time line, a composite of the experiences of the customers we interviewed for this article.

NeXT sales case studies

	1991	1992	1993	1994
Company X	First sales call	Deal closed Prototype completed	Revised commitment Trial deployment 350 seats	Real deployment begins 1000 seats
Company Y		First contact	Design win Development begins Deployment begins 200 seats	First app done 1200 seats
Company Z		First sales call Start prototype Decide "yes"	Design win Potential rollout increase	Deployment begins 350 seats

Source: NeXT

## Risk

BY

It used to be axiomatic that choosing IBM. But Today, companies l advantage. Failure.

Nowhere is this more true than in custom applications, where corporate-technology is invited to compete for a strategic process for a strategic company is finding.

Still, the decision to adopt NeXT is one that requires a great deal of vision and intestinal fortitude. Those who take the plunge are often out on the bleeding edge. As a result, the process of implementation and committing to it has typically been a long, difficult, and sometimes agonizing cycle that can take months to a few years.

**Tough questions** According to the questions most often asked by potential customers, the implementation of object-oriented technology is a long and difficult process.

- Is object-oriented technology the best way to provide the advertised benefits?

- Can NEXTSTEP handle custom applications, especially those requiring complex customization, which has been a problem in the past?

- How does NEXTSTEP compare to the competition, including Smalltalk, or from other vendors under Windows?

- In a heterogeneous environment, how does NEXTSTEP itself handle about my Windows applications?

- How difficult is it to integrate with existing systems we're in trouble, because of the complexity of the project?

- What productivity gains can be expected?

**Proof statements** Recognition of the value of object-oriented technology is a key factor in the decision to adopt.

**Strategy** Development of a clear strategy for the use of object-oriented technology is a key factor in the decision to adopt.

**Applications** Development of a clear strategy for the use of object-oriented technology is a key factor in the decision to adopt.

**Partners and Tools** Development of a clear strategy for the use of object-oriented technology is a key factor in the decision to adopt.

PHOTOGRAPHS BY JAMES LABONTÉ



F E A T U R E

# Phase I: Evaluation Risk Assessment

BY CONNIE GUGLIELMO

It used to be axiomatic that no information-systems manager was ever fired for choosing IBM. But the days of playing it safe in technology are long past. Today, companies look for computer systems that give them a competitive advantage. Failure to take a risk may be the biggest risk of all.

Nowhere is this more true than in the market for mission-critical custom applications, where NeXT does battle for the hearts and minds of corporate-technology strategists. And more often than not, when NeXT is invited to compete in an evaluation process for a strategic new application, the company is finding a receptive audience.

Still, the decision to take a risk on NeXT is one that requires equal measures of vision and intestinal fortitude. Customers who take the plunge know that they are out on the bleeding edge of technology. As a result, the process of evaluating, testing, and committing to NEXTSTEP has typically been a long, drawn-out, and sometimes agonizing cycle that lasts from several months to a few years.

**Tough questions** According to NeXT, these are the questions most frequently asked by potential customers who are evaluating object-oriented technology and NEXTSTEP:

- Is object orientation real? Does it provide the advertised productivity benefits?
- Can NEXTSTEP build the kind of custom applications we need in our organization, which has unique requirements?
- How does NEXTSTEP differ from the competition, including PowerBuilder and Smalltalk, or from simply using C++ under Windows?
- In a heterogeneous environment, will my NEXTSTEP application and NEXTSTEP itself integrate with the rest of my environment? What about my Windows applications, SQL databases, networks, and servers?
- How difficult is it to learn NEXTSTEP? If it's anything like Windows, we're in trouble, because Windows was tough enough.
- What productivity applications are available for NEXTSTEP?

**Proof statements** Recognizing the hurdles customers face before making a

long-term investment in NEXTSTEP, NeXT has launched a campaign to redefine the evaluation cycle by helping its customers identify early on the issues, advantages, and problems they face in making the move to object-based technology.

How do you find the answers to these questions? For starters, says Warren Weiss, NeXT's vice-president of North American sales and marketing, talk to other clients. "My single biggest recommendation is to call customers early on, so you don't have to rely solely on the word of salespeople."

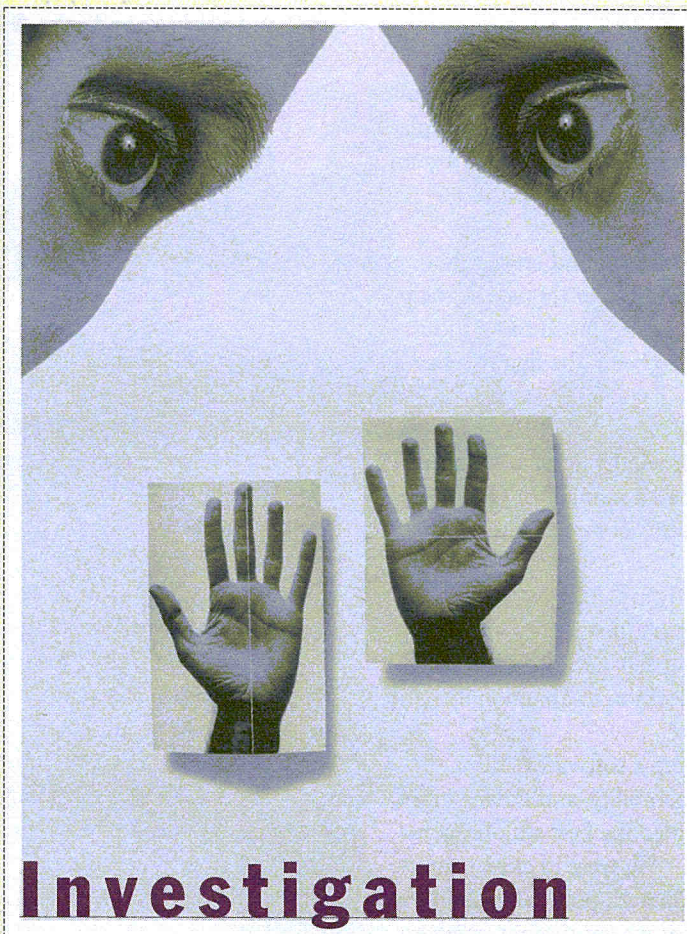
Secondly, recognize that changing to a new technology will require partnerships with VARs and system integrators. While most companies already have established partnerships, NeXT is in the process of expanding its roster of support providers, which it will recommend to clients looking for collaborators, Weiss says.

In addition, customers should understand that there will be pain involved in implementing NEXTSTEP or, for that matter, any new technology. One good measure of how much pain there will be and whether it will benefit the company's bottom line is actually building a NEXTSTEP application. Customers who are serious about the technology have been building prototypes using NEXTSTEP and other development environments under consideration as a way to compare the various technologies. Company executives can then see if the applications they envision can really be created using a particular technology.

"Customers have generally explored every traditional method and every other format – from COBOL to C++ – prior to getting NeXT involved," says Weiss. "Because they're usually involved in high-risk projects that will affect the bottom line, they want to see a prototype. But everyone else throws the prototype away because they're just screens. Our prototype, because it's built using true object technology, is the first good iteration of the project."

NeXT won't build the prototype for customers, but, Weiss says, "we look over their shoulder." Potential customers can participate in NeXT's mentorship program, a ten-week developer camp in which they can learn to use object technology and get help creating the specific programs and customized apps they desire.

**Banking on NEXTSTEP** In the case of NationsBanc-CRT, the securities-trading arm of the Virginia-based banking giant, the prototype was one of the



Evaluation						
Strategy	Decision to go with OOP	Identify goals/benefits	Evaluate business case	Compare development technologies	ROI analysis	Check NeXT reference accounts
Applications	Build preliminary prototype			Evaluate prototype results		
Partners and Tools	Begin developer training	Investigate VARs, integrators	Investigate commercial software	Investigate workstation options	Investigate server options	



final steps in a nearly year-long evaluation process that led the company to make a long-term commitment to NEXTSTEP in May, according to John Keazirian, executive vice-president of information technology.

The process began with the company identifying the goals and benefits it hoped to achieve using object-oriented technology for applications that involve pricing securities, risk management, real-time information distribution, and operations and settlement processing. In order to remain competitive, NationsBanc-CRT recognized that these complex applications needed to be developed faster and would have to run on multiple platforms that would put more computational power on traders' desks. This interoperable environment, filled with custom applications, would be part of a real-time, global network fueled in part by high-powered servers.

After sending many of its in-house staff through NeXT's developer boot camp, NationsBanc-CRT decided that NEXTSTEP was superior to the other technologies under evaluation. "NEXTSTEP was a mature, top-to-bottom object-oriented technology. There weren't any other ones out there, with the exception of Smalltalk. But Smalltalk doesn't fit in with our environment because of the performance penalties you pay on the calculation side," says John Bruns, vice-president of technology. "We tried a number of builder technologies to create the prototype and there was no comparison [to NEXTSTEP]."

"Developers felt they were able to take the project and rework it a couple of times in the same amount of time they thought they were going to build an application. As a result, we already have a much more robust object library, and the prototype is pretty close to being the final application," he says.

**Business considerations** But NEXTSTEP did not win its place at NationsBanc-CRT on its technical merits alone. "We had a number of other criteria we were looking at," adds Keazirian. "In terms of their software and hardware, we were concerned that they would be a proprietary solution. Would they have the resources to drive the hardware and give us the kind of power we need? What was NeXT's viability as a firm?"

NeXT's Object•Enterprise alliance with Hewlett-Packard solidified the deal. The company also approved of NeXT's decision to abandon its hardware business and focus exclusively on software.

"We felt they needed to concentrate on being a software vendor, on opening up new systems and increasing interoperability, and having an alliance with HP, because we felt that HP provided the best scalable solution with a RISC architecture," Keazirian says. "We were in close contact with NeXT as it was going through its transition and, point after point, we saw them falling into a business plan that we felt was important for them to survive."

**Near hits** But even though NEXTSTEP has repeatedly scored the highest marks, technologically speaking, during the evaluation phase, it has failed to make the final cut at several companies for a variety of reasons.

"We looked around and tried to figure out who was a leader in the field as part of an investigation to see if object technology was real in a business environment," said one executive at a major financial institution in New York.

"We started work with NEXTSTEP and 75 percent of what NeXT told us was true: It was easy to develop, there was seamless integration, and there were resources to support us. We set out to accomplish something: Deliver an application on time to one of our customers and have it implemented. We were able to do that. But when you start getting into the next level of investment, that is, whether to make it a corporatwide technology on our trading floor, that's where other considerations come into play – politics.

"We are still using object-oriented technology and we consider our NeXT experience extremely valuable. But we've stopped using NeXT because we require flexibility without worrying about which platform will succeed. It's easier to buy hardware than develop software, so the fact that NEXTSTEP doesn't run on Macs and Suns was an issue."

NeXT knows it won't win every sale. For every company that is willing to take a controlled risk in exchange for huge potential benefits, there are many more that seek the comfort of the safe choice. Today, the safe choice – the one you won't be fired for making – is Microsoft.

On the other hand, most information-systems managers today understand that the big payoff from technology is a strategic advantage. After going through a careful evaluation process of gathering information, comparing technologies, developing a prototype, and lining up third-party support, an increasing number of far-sighted companies are choosing NEXTSTEP, and not looking back. ♦

CONNIE GUGLIELMO is a free-lance writer and editor.

## Phase II: Development Building Permit

BY CLAIR WHITMER

If some customers fall in love with NEXTSTEP during the evaluation stage, then the development phase is like coming home after the honeymoon: Now you live with it.

Warren Weiss, NeXT's vice-president of North American sales and marketing, says that decreasing the time to market for a product is the overriding concern for most NEXTSTEP customers. And the development stage – in which the down-and-dirty coding happens – is when the NEXTSTEP time savings are supposed to start accruing.

The good news is that most customers do report exactly what NEXTSTEP salespeople have promised: faster development cycles.

Faster, that is, once the in-house staff is up to speed on object-oriented design and NEXTSTEP programming. Faster, that is, once the staff's needs assessment has been recalculated in terms of a new development environment with new capabilities. Faster, that is, except for the most time-consuming elements universal to application development: staff training, needs analysis, architecture design, and user testing.

**Choose your partner** Since such requirements vary from site to site, there's no such thing as a "typical" NEXTSTEP product life cycle, especially during development. But the vast majority of NEXTSTEP customers are object-oriented-technology neophytes and need to build a lot of additional training time into the implementation schedule, often by bringing in outside partners such as systems integrators, VARs, and consultants, or all three.

For customers who really need to meet NeXT's estimate of three to six months for developing a custom application, the quickest method is simply signing on hired guns to provide a finished product. That's what PanCanadian Petroleum did for its Gas Production Inquiry and Reporting System, when it decided that the application had to be completed in five months.

Since its relationship with the team of consultants has been so critical to the final outcome (four in-house projects are due to be deployed in April), Jocelyn Barr, PanCanadian's coordinator of applications architec-

ture, emphasizes the game.

"We ought to be Frank King, president of a house that has

To increase the customers, NeXT now devote their time and VADs.

**Slips happen** According to King, work avoid the three major

• NEXTSTEP programming language model. A customer understanding of objectures may have a ha goals that fully explore as designing generic reused for future pro

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"NeXT helps you faster, but it doesn't h mistakes faster," says Agency, a talent agenc entertainment industr

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ture, emphasizes the importance of choosing outside partners early in the game.  
“We ought to be there, if not day one, then day two or three,” agrees Frank King, president of Austin, Texas-based Pencom, a system integration house that has handled nearly 30 NEXTSTEP customers.  
To increase the number of partners available to custom-development customers, NeXT recently hired five Object Channel representatives who now devote their time to recruiting and assisting system integrators, VARs, and VADs.

**Slips happen** According to interviews with customers and system integrators like King, working with such an outside partner can help a company avoid the three major pitfalls to organizing a NEXTSTEP project:

- NEXTSTEP is not just a new programming language but a new conceptual model. A customer without a thorough understanding of object-oriented architectures may have a hard time setting project goals that fully exploit its advantages, such as designing generic objects that can be reused for future projects.  
“People base their requirements on the existing system. When they see that you can do so much more [with NEXTSTEP], they want to ask if you can do this other thing as well,” says Vimal Chowdhry, CFO for Mt. Clemens Hospital in Detroit. His three-person team implemented a comprehensive system for patient care and records in 18 months.
- Focusing too much on productivity gains during the evaluation stage can foster unrealistic expectations.  
“We could have managed the expectations of our users better. NeXT says you can do it so much faster, and that’s true, but our users thought, ‘Just press this space bar and it will be there,’” says PanCanadian’s Barr.
- As with any development environment, slips happen.

“NeXT helps you put things together faster, but it doesn’t help you do it correctly. You can just end up making mistakes faster,” says Alex Henry, MIS director for the William Morris Agency, a talent agency in Los Angeles that represents individuals in the entertainment industry.  
When the NEXTSTEP license was signed, William Morris was not only new to NEXTSTEP, it was new to computers, period. Working with outside consultants under his supervision, Henry has directed the development of several integrated modules that automate almost all of the agency’s everyday functions, from tracking the 200–300 phone calls a talent agent

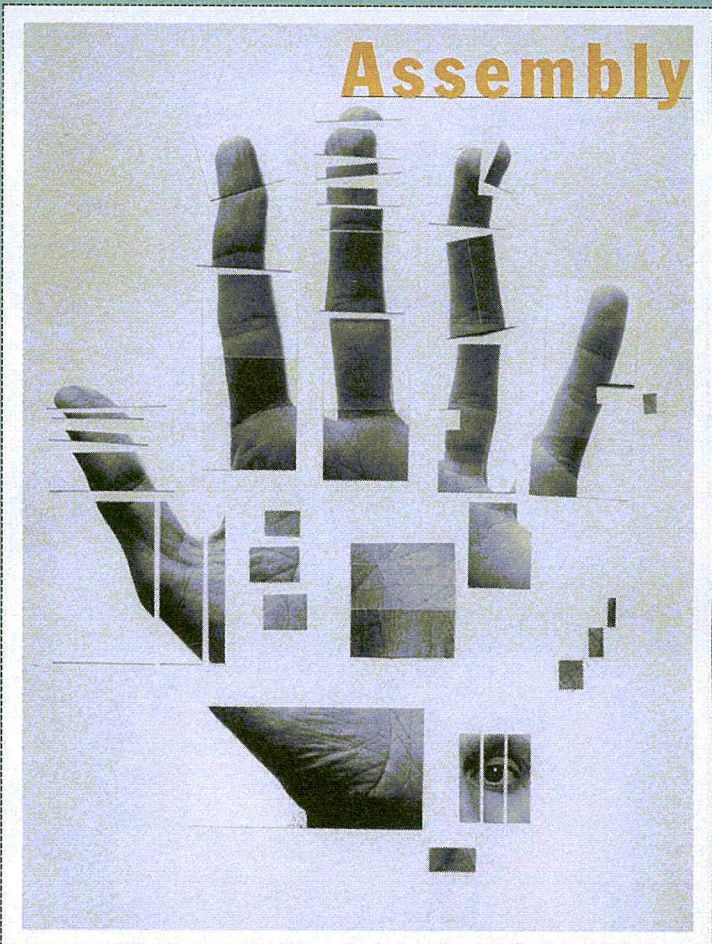
makes in a day to matching actors’ résumés with cast descriptions.  
In the case of William Morris, the mistake was “overengineering” the first version of the interface, according to Henry. The second rev of the first two modules, which includes simplified interfaces, is now being beta-tested and will be deployed this fall. Five more modules are scheduled to be deployed this winter.  
For these reasons, most companies discover that it really pays to allot sufficient lead time for designing the architecture and overall system infrastructure. For first-time NEXTSTEP customers, this means both a more flexible schedule and allowing for some organizational changes during the development phase.  
“Customers want the expertise in-house at the end of the day. It turns out that mentoring is a much bigger concern for people than we would

have thought a year ago,” says Pencom’s King. He reports that, instead of straight programming consulting, most of his customers now want joint development teams organized to transfer his programmers’ NEXTSTEP knowledge to in-house development teams.

**Proof of concept** NeXT itself recently unveiled a mentorship program that provides a 10–14 week “education” designed to teach NEXTSTEP by helping in-house staff prototype the company’s custom applications, instead of using generic training exercises. This method also provides customers with the chance to “throw away” their first design attempt.

“If everyone got rid of their first application, they’d be better programmers,” says Scott Weiner, mentorship program manager. Most users claim that the extra time for all this training and experimenting is partially recovered by the technology itself. With NEXTSTEP’s Interface-Builder, interface design and other coding tasks are indeed faster than using conventional programming languages. And even in cases in which a

company’s first effort isn’t record-breaking in terms of productivity, time is saved in maintenance reduction or reusing generic objects to build the next application.  
Schedule gains for a single project can be made as well by designing prototypes not just as proof-of-concept tools, but as building blocks for the finished system. NeXT executives stress that prototyping under NEXTSTEP should be considered part of the development phase, not a final evaluation test.  
“Everyone else takes the prototype and throws it away. [NEXTSTEP]



Development						
Strategy	Requirements analysis	Architectural design		Plan network		
Applications	First iteration of system	Survey users on interface, functionality		Second iteration of system	Write documentation	In-house beta test
Partners and Tools	Choose integrator, .VAR	Accelerate staff training	NeXT mentorship program	Select third-party apps	Bug fixes and final touches	
					Select hardware suppliers	



prototypes close the window of the product life cycle," says Weiss.

NEXTSTEP customers agree that NEXTSTEP prototypes are time-savers. Even if the initial prototype is just an interface shell, that shell can later be tacked on to the back end without major modification. Pencom's system integrators design applications as a cycle or "spiral" of prototypes, with each level building on and refining the last version, according to King.

Mt. Clemens Hospital used a similar methodology. First, it designed the data tables intended for use, then had end users populate the tables at the same time the basic architecture was being designed. "That way we didn't waste time," says Chowdhry.

Chowdhry's team, however, did end up needing a lot of additional time to build in three levels of redundancy for the CPU, ensuring a system-crash recovery time of 45 minutes. Since the hospital runs on this system, its reliability is essential, even if ensuring it prolonged the development cycle.

Indeed, most custom-development efforts call for something uniquely essential to that site. Such requirements are almost invariably time-consuming, but the customer ends up with a better product.

"The productivity gain that NEXTSTEP gives you can be used in two ways: to do a particular task more quickly or to do a more sophisticated task. All of my clients have opted for the latter," says King. ♦

CLAIR WHITMER is the West Coast correspondent for the IDG News Service.

## Phase III: Deployment Proving Ground

BY ELIOT BERGSON

**For all the concentration on software and hardware that goes into the early stages** of the NEXTSTEP cycle, the most important consideration in deploying any new technology is people. Whether you are writing custom apps, building new networks or upgrading old ones, or rearchitecting your entire business, technological decisions should not be divorced from the needs of users.

**Start early** One of the easiest ways to ensure a successful rollout of a NEXTSTEP project is to involve as many end users as you practically can during the evaluation and development stages. "We have rarely had problems with deployment because we've worked closely with our traders, who are our users. We live on the trading floor," says Hadar Pedhazur, managing director of global equity derivatives for Union Bank of Switzerland (UBS) in New York.

Problems still arise, Pedhazur notes, from deploying a custom system to offices in different parts of the world, but an agreed-upon common look and feel is the essential starting point. Differences are hammered out in conference calls and occasional meetings of all the involved players to reach a "peer-group agreement," he says. It is far easier to tweak an application for differing legal practices in various countries, for example, if the template for factoring these practices into the application is chosen early on.

Dwight Koop, executive director of information technology at Swiss

Bank Corporation (SBC), agrees: "It's a simple metaphor. If you use a futures trading app in Chicago and go to trading stocks in London, the app changes but the look and feel is the same." Koop explains that this is only a logical extension of the reusable-code capabilities of NEXTSTEP, because "forcing creative people to reuse other people's creativity is okay if they can work faster."

And users who are consulted early will understand why new software doesn't work the way it should, explains Mark Richards, president of Affinity Software, a spin-off of Alain Pinel Realtors in northern California. "We thrust a lot of betaware on our users. They were gracious putting up with bugs, and continue to do so because we're always putting up new things," he says.

**Technology of champions** Clearly, winning the support of end users comes from more than simple involvement. Commitment from corporate heads and team cohesion both contribute to, and result from, user acceptance. And that usually results in NEXTSTEP champions in the organization.

"Without the commitment and dedication of our technology staff and users, we wouldn't have succeeded as well as we did," says Brad Badeau, CFO of Toronto-based Trimark Investment Management, Canada's third-largest mutual-fund-management firm. "It's really important to have people on your side. Not every person will embrace change, but you must have a minimum for that embrace. You have to have more than one champion."

Trimark gained its champions when company executives watched a NeXT engineer build an image-management application in two weeks. They fell in love with black hardware and lobbied Oracle to port its Forms application to NEXTSTEP. Even through NeXT's transition, executives maintained their original commitment to hardware, snapping up used NeXTstations when they could be found, and set up their client-server network on Pyramid servers with 1GB of RAM and 50GB of storage. Trimark currently manages 550,000 fund accounts with assets over \$6 billion Canadian.

"That commitment has worked its way through all levels of our organization," Badeau says.

A champion strategy has also worked well for the Val Verde Unified School District, in Perris, California, even though education typically has a "wider constituency" than business, says Darrell Lynn, IS director for the district. "When individuals find something that makes them work better and easier, they become champions. You can't afford not to have champions in all areas," Lynn says.

Val Verde administrators have just finished putting a NEXTSTEP machine on every teacher's desk in district schools that are wired with the FDDI (fiber distributed data interface) backbone to the district's T1 Ethernet system. Teachers and students are using NEXTSTEP in calculus labs and art classes, for yearbook production and Internet access, and as a districtwide curriculum server. An on-line help system and training classes help bring educators up to speed on the new platform. And the district held a month-long camp for sixth-, seventh-, and eighth-grade students this summer. "These kids are the superusers on campuses; they're going to be running classes for other kids and advocating. This is scalability of training," Lynn says.

### Deployment

Strategy	Plan future phases of project	Organizational changes	Encourage user champions		
Applications	Infrastructure assessment	Equipment staging	Site installation	Extend application modules	Extend deployment
Partners and Tools	Begin user training		Install third-party software		

**No mystery train** Tra deployment strateg business needs. Jim keting, notes that " training so users ca

Alain Pinel fou years in the busines "monsters on the sy land, California-bas software, Alain Pine length. "There's alw tem has been so suc together to provide cluding forms mana complete with imag

The company h escrow and mortgag NEXTSTEP fold, p software, and traini the purchasing proce ning, we saw the m group that spans comp of people are involve action: inspectors, es cers, contractors. W change in the process that change is human logical," Richards say

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While making sur SBC was also able to f tations from getting ou preconfigured workspa Cellular, which has pla tomer cellular service i age was "designed com satisfaction. Customers instead of 30," says Ing officer.

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**No mystery train** Training was cited by all users as the linchpin of their deployment strategies, though the level of training differs according to business needs. Jim McCrory, NeXT's manager of financial-services marketing, notes that "successful deployments have made an investment in training so users can take ownership of the new environment."

Alain Pinel found that even its veteran agents, some of whom have 30 years in the business and don't normally welcome change, have become "monsters on the system," according to Richards. With the help of Oakland, California-based Adamation, which designed much of the company's software, Alain Pinel has developed 27 training modules, each an hour in length. "There's always some training going on," says Richards. The system has been so successful that Alain Pinel has networked four of its offices together to provide complete, on-line real-estate services to its clients, including forms management, feeds from listings services, customized listings complete with images of properties, and closing tracking.

The company has also brought local escrow and mortgage companies into the NEXTSTEP fold, providing a machine, software, and training to fully automate the purchasing process. "From the beginning, we saw the market as a big workgroup that spans company boundaries. Dozens of people are involved in closing a transaction: inspectors, escrow and bank officers, contractors. We're formulating a change in the processes of transacting, and that change is human rather than technological," Richards says.

For SBC, the very nature of its financial-trading business spans boundaries: The company has over two dozen offices around the world and maintains a sophisticated mainframe data-processing system, one of the world's largest private networks, and a huge legacy of technology investments made over many years, according to Koop. Thrown into the mix are agreements, contracts, legal descriptions, time frames, statistics, and analyses that are often site- and time-specific.

Given the frenetic nature of international finance, SBC opted for common functionality in its applications to specifically cut down on training time and foster cohesion among geographic groups. Because developers concentrated on a common look and feel across applications, traders were up and running in the new environment very quickly, Koop says.

While making sure that traders received the functionality they needed, SBC was also able to focus its training resources and prevent users' expectations from getting out of control by deploying its applications with a preconfigured workspace. This strategy has also worked well for McCaw Cellular, which has placed NEXTSTEP-based machines for activating customer cellular service in 50 service centers in test cities. The custom package was "designed completely for ease of use and much more customer satisfaction. Customers can get their phones activated in seven minutes instead of 30," says Ingvar Petursson, vice-president and chief information officer.

The system also provides on-line training, complete with a hypertext search engine and multimedia capabilities. The company plans to roll out

4000 machines for activation and customer service to 100 markets over the next year.

Chrysler Financial has also used a fixed-workspace approach in its custom rollout. To streamline training and get users quickly up to speed, it has also fine-tuned its deployment to a science. Every showroom that is set to receive Chrysler's new auto-financing system receives a training machine six weeks prior to the rollout date. Contractor Hewlett-Packard performs an infrastructure assessment at the showroom. Three weeks before the roll-out, HP engineers, working from a staging center in Corvallis, Oregon, get all the equipment together, including a custom-designed cabinet with outlets, fan, and uninterruptible power supply. They load the server, set up the master and clone for NetInfo, and configure network equipment. The machines arrive at the showroom on the Wednesday prior to the Friday deployment, when HP installs the PCs, printers, servers, new routers, hubs, and modems, laying new wire where necessary. On average,

each site receives 25 machines; by the end of 1994, Chrysler plans to have 2500 machines in 100 branches.

For the first three days, trainers are on-site to answer questions about the custom apps, Mesa, WordPerfect, and custom calculators and screen savers. "Between the site survey, documentation, and training, we make sure the branch is emotionally ready for the rollout," explains Mike Adelson, project team leader.

**Expect the unexpected** In the end, even the best preparation, training, and involvement can't prevent the unexpected. Any major technological change in an organization will run into a few glitches.

For McCaw Cellular, the customer-activation system has been successful, but only as long as it's up and running. Petursson reports that because the company is "pushing the envelope" in client-server computing, the system sometimes crashes. So in designing its new customer-service centers, McCaw is spending additional time "simulating the user environment" and testing all the components.

Another way to prevent disaster is to use every advantage you have. Williams

Telecommunications, a large private-line fiber-optic service provider, perfected its NEXTSTEP work on its networks first, leveraging all its expertise before bringing the work to other areas of its business. Val Verde's educational mission has been carried over to training teachers and students to foster acceptance. Alain Pinel is a young company that could afford to completely redesign and construct a new computing system.

Alas, some disasters cannot be foreseen. When a bomb exploded at UBS's London offices in April 1993, the company lost windows - but its uninterruptible power supply prevented any loss of data. SBC's Chicago office, however, wasn't as lucky last April, when a water-main break shut down much of the city's corporate center. SBC sent its traders to London to continue working - and "learned to have completely ready hot backups," says Bill Martin, vice-president. ♦

ELIOT BERGSON is managing editor of NeXTWORLD.





**O**ver the past two years, the NEXTSTEP community has witnessed the birth of an object industry. Unfortunately, the variety of objects for sale so far has been limited. But that may change as more developers find an opportunity to remarket their internal development tools as commercial products.

Objects on the open market largely break down into two categories. The first contains objects that take off from where NEXTSTEP stops, providing useful tools for extending the AppKit, integrating the disparate parts of NEXTSTEP, or adding functionality that NeXT simply forgot. Some examples include objects like Objective Technologies' award-winning SmartField-Palette and RDR's RDRSwitchView. Most of these objects are good, solid implementations, though I haven't seen anything yet that I would call inspiring.

The second group of third-party objects contains specialty classes that provide specific functions, like Hot Technologies' BarCodeKit and Trillium Sound Research's TextToSpeech Kit. By and large, these are niche products. If you need to solve a particular problem, they're great; otherwise, they don't apply to a broad segment of application projects.

This dearth of objects is one of the reasons that NeXT's ObjectWare machine is still sitting on the runway, all fueled up but with its engine idling. For ObjectWare to really take off, developers need to offer rich sets of powerful tools, instead of just a few simple nice-to-haves that any competent programmer could write in one or two weeks.

There's a simple metric for answering the question, "What makes a good object?" An object is good if it's cheaper — in both the short and long run — for a developer to purchase and use rather than write the code from scratch. NeXT's AppKit passes this test; the same can be said of only a few third-

party kits currently on the market.

Like most developers, I have developed my own library of objects to speed development of full-blown applications. My objects are mostly related to building document-based applications: abstract superclasses for an Application delegate, a Window delegate, and a document controller that provides support for reading and saving files; an intelligent set of objects for dealing with Preferences panels; a FontWell and FilenameWell inspired by NeXT's ColorWell; and a variety of subclasses for NeXT's Cell, Text, and List objects.

I'm not particularly unusual. Lots of third parties would benefit from looking at their own applications to see what common code can be abstracted and put in a separate foundation classes library.

But should I set up shop and sell my objects just because I have found my own classes to be useful? Providing the tools is only half the work. The other half involves extensive testing, writing documentation, and providing support. If the only person who tests an object is the person who wrote it, it's likely to have dozens of lurking bugs. They may not trip you up, but they'll certainly catch your customers.

I haven't done this work for my classes, so please don't write me asking for copies — I'm not giving them out. Still, there is a golden opportunity out there for developers who are prepared to do the work needed to remake their internal objects into commercial products. The buyers are out there. So far, it's the products that have been found wanting. ♦

SIMSON L. GARFINKEL is the senior contributing editor to NeXTWORLD.

## Build Better Objects

SIMSON L. GARFINKEL

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# NeXT AND HEWLETPACKARD DELIVER THE POWER OF OBJECT-ORIENTED SOFTWARE ON AN ENTERPRISE SCALE

Financial services is an industry in which time is critically important.

Here, where every second can mean the difference between profit and loss, some companies have already harnessed the power of software objects in select departments to stay ahead of rapidly changing markets.

Now NeXT and Hewlett-Packard together offer a suite of business solutions that spread this power throughout the entire enterprise.

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Object•Enterprise combines the strengths of two technology leaders to offer what no one company can: a unified enterprise-wide information system based entirely on object-oriented software.

In a time-conscious business such as a brokerage firm, this type of system offers an irrefutable advantage. Because it allows a new generation of financial applications to be developed and deployed at every level of the organization—with radically greater speed.

Object•Enterprise brings NEXTSTEP™ software to a full spectrum of Hewlett-Packard hardware, from PCs to workstations, with full support for NEXTSTEP objects on business servers. The result is a seamless and scalable system that offers a true competitive advantage.

NEXTSTEP: "...PROBABLY THE MOST RESPECTED  
PIECE OF SOFTWARE ON THE PLANET."

The opinion is from *Byte Magazine*. The fact is, NEXTSTEP is without rival as the only shipping object-oriented user and development environment.

Many Wall Street traders are already reaping the benefits of this technology, deploying complex custom applications in months instead of years.

That's because NEXTSTEP allows applications to be constructed in a modular





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**T**he much-anticipated "unauthorized" biography of NeXT is about to hit bookstores across the country, feeding the aficionados of popular business books with another dose of Silicon Valley pop mythology.

*Steve Jobs and the NeXT Big Thing* (Atheneum, New York: 1993), by Randall Stross, a business professor at San Jose State University, is sure to cause a big stir in the NeXT community. It is ripe with lurid stories and blistering financial analyses. What it doesn't offer is a big-picture context that draws larger meaning out of the facts of the company. Unfortunately, Stross settles for cheap shots in place of real historical perspective.

It might have been different had NeXT cooperated with Stross, but his early overtures to the company were rebuffed, and he continued the project based on interviews primarily with former employees and competitors. Thus, Stross the professor turns into Stross the investigative reporter. Bob Woodward he's not.

First, he allows his story to be shaped by who would and would not speak to him. The truth is independent of the ease of a reporter's access to facts. A negative viewpoint doesn't become more valid simply because negative sources are more readily available. Readers rely on a reporter to do hard work and judge facts dispassionately, regardless of the travails necessary to gather them.

The sourcing sometimes takes the book careening off in strange directions, as in an opening-chapter rehash of the Xerox PARC story (more relevant to Apple than NeXT) and a rambling digression on the history of SPARCstations. More seriously, a Sun-centric tone permeates much of the book, which may not be surprising considering the warm welcome Stross

evidently received in Mountain View and the cold shoulder in Redwood City.

Although Stross claims to have interviewed more than 150 people, he relies far too much on secondary materials. He ridicules the naivete of the general press and then quotes liberally from its stories to prove specific points.

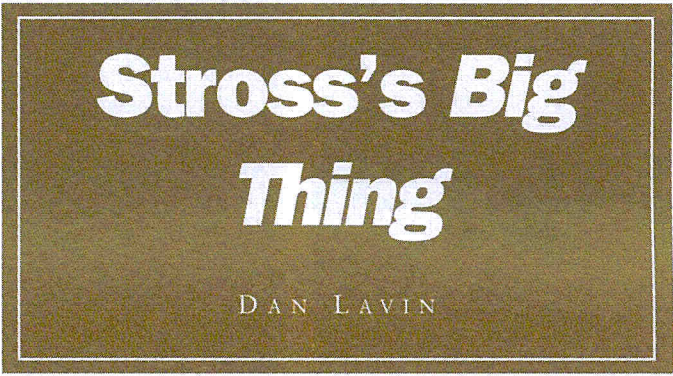
Also, Stross allows himself to be sucked into the dubious but popular pastime of armchair psychoanalysis of Steve Jobs. It is always seductive to listen to the anecdotes about temper, irrationality, and sheer genius, and cobble together a psychological portrait like a New-Age consultant. But it has been done better in many places before.

Finally, the book operates with perfect hindsight. Of course, the role of history is to show past mistakes in a context from which people can learn. But the best history explains the motivations of the characters in the context of the information available to them then, not from the vantage point of five years later.

The book does have some value, including a wealth of amusing anecdotes I had not heard before. And when Stross goes with his strength — business matters — he comes through with excellent research and analyses of NeXT financials and its relationships with Canon and Businessland.

Certainly, NeXT's saga is the stuff of a great book. And, yes, that book would include tales of blown opportunities and burned money. But it would also have some warmth for its subject and some appreciation for NeXT's considerable accomplishments to balance its glee over NeXT's failures. It would also recognize that the NeXT Big Thing, though altered and battered over the years, is still out there, still ready to be grasped. ♦

DAN LAVIN *comments on business issues in NeXT Ink.*



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fashion, using software objects as building blocks. These objects, easily re-used and maintained, take the place of complicated and error-prone computer code.

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# Ante Goes Up for Flat-file Managers

*Europeans challenge DataPhile for low-end database market*

by SETH ROSS

**T**he database market under NEXTSTEP has been focused mainly on industrial-strength relational-database engines and third-party front-end development tools. But if you have a smaller project, or work in a small business or department, a simple flat-file database manager may be all you need.

Although the market for flat-file databases is hotly contested on other platforms, only now is there significant competition in this category under NEXTSTEP. For this round-up review, we compared the second release of Stone Design's pacesetter DataPhile to two challengers, VarioData 2.6 from d'ART Computersysteme GmbH and Xanthus International's Celebro Professional, which is still in beta testing.

While we found that DataPhile has extended its lead with new features, VarioData has its own strengths, and Celebro will give both a run for the money if Xanthus delivers on the product's strong early promise.

There are several requirements for any flat-file database product. It must allow you to enter, sort, and query records. It must let you work with data in multiple views and groom a variety of reports. It must be able to import from, and export to, other apps, such as word processors and spreadsheets.

All three database products in this review meet these basic requirements. They all support a wide variety of field types, from Boolean yes/no check boxes to sounds. They let you create multiple views and report formats, and guide you with complete on-line help.

We expect a NEXTSTEP database to raise the bar. It should come

## DataPhile 2.0

*This classic NEXTSTEP app is an interface innovator and fun to work with. Although missing features such as record-level locking, multiuser access, and report summaries, DataPhile 2.0 remains the mainstream choice for flat-file databases.*

**\$695**

Stone Design, 3725 Rio Grande Blvd. NW, Albuquerque, NM 87107. 505/345-4800, 505/345-3424 fax; info@stone.com.

complete with intuitive design tools and support for rich text, images, and sound. Ideally, it should provide simultaneous multiuser access with record locking, a scripting language, and hooks into SQL databases.

## Return of DataPhile

Now in Version 2.0, DataPhile is the standard among NEXTSTEP flat-file databases. Think of this app as a NEXTSTEP rendition of Claris Corporation's FileMaker Pro, the popular Macintosh app that has made database mavens out of managers and superusers out of secretaries. Although not as feature-rich or mature as FileMaker Pro, DataPhile is closing the gap.

When NeXTWORLD first reviewed a beta version of DataPhile ("Flat and Sharp," NeXTWORLD, Spring 1992), we liked its ability to manage personal records and its innovative, simple interface. That evaluation still stands — building a database is a breeze with DataPhile. You can get started quickly with sample databases for form letters, flash cards, to-do lists, and invoices. If you have a text file full of data, you can import it into DataPhile in one quick step, and the app will automatically create a database with matching fields.

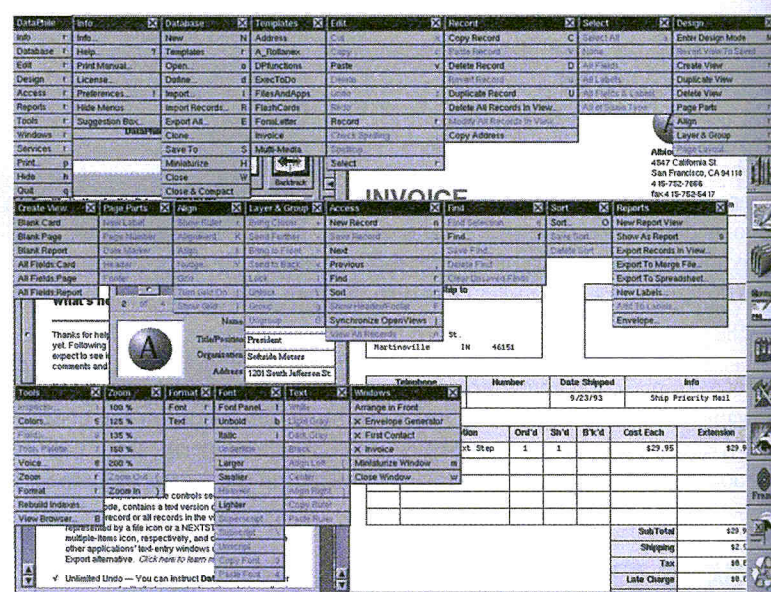
The design tools wrapped into

DataPhile are superior to those of database apps on other platforms. With its detailed Inspector panel, DataPhile gives the designer free reign to control the alignment, layering, position, and color of every field and layout element. Like its sibling app Create, DataPhile transforms design drudgery into design fun.

Experienced DataPhile 1.x users will find that 2.0 contains a number of improvements. With the DataWell, you can quickly and easily export a record by dragging and dropping its

also successfully made the transition to Intel processors; its fat-binary version allows shared databases on mixed networks of white and black machines.

Unfortunately, the effort to port to Intel delayed the implementation of important features both requested by users and suggested in our first review. DataPhile still does not allow multiple users to work concurrently on the same database. This renders it inappropriate for situations in which more than one user at a time



DataPhile's Show Menus command displays each and every menu and submenu, providing a good overview of the app's functionality.

icon into another application, such as Athena Design's Mesa. You can now rapidly modify records by using a single command to change a field in all the records of a view to the same contents. DataPhile 2.0 has

needs access to critical data — a significant limitation.

While DataPhile has always supported calculations in a single record, there is still no way to develop summary reports involving calculations across multiple records. But Stone Design provides a workaround: Use the Export to Spreadsheets command and work with your data in Mesa or Improv. This solution conforms to NEXTSTEP's modular design philosophy but limits the range of problems that DataPhile can solve on its own.

## VarioData verve

Feature for feature, VarioData is similar to DataPhile, adding a few twists but lacking interface niceties.

VarioData — available in North America from both Alembic Systems International and Impact Software Publishing — is actually a package consisting of two separate applications: VarioData and VarioBuilder.

## VarioData 2.6

*VarioData is actually two apps in one, a database-design app and a database-access app. While VarioBuilder lacks DataPhile's extensive design tools, both apps are solid performers. Together, they take the pain out of database publishing.*

**\$749**

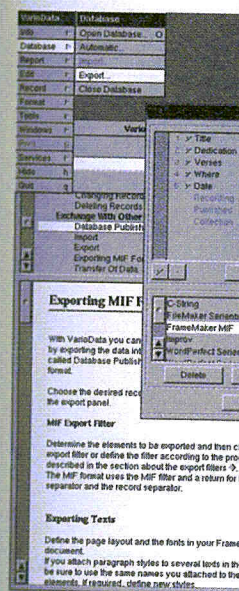
d'ART Computersysteme GmbH, Virchowstraße 17-19, 22767 Hamburg, Germany. 49/40/38.02.30, 49/40/38.02.32.90 fax; software@dart.de. In North America, Alembic Systems International, 14 Inverness Dr. E., Ste. G228, Englewood, CO 80112. 303/799-6223, 303/799-1435 fax; info@alembic.com. Impact Software Publishing, 36-32 34th St., Long Island City, NY 11106. 718/472-0600, 718/472-0160 fax; info@impact.com.

VarioBuilder helps create databases, while VarioData lets you add, find, and delete records. By contrast, Phile and Celebro offer design and access modes in a single app.

The advantage of the VarioData approach is simplicity. Phile and Celebro are complex menu hierarchies necessary for their functionality. Since VarioData is a single design and access app, each separate app, each straightforward menu benefits of the segregation. We still prefer the ease of design mode on the other apps.

VarioData's strength is its extended import/export capabilities, which includes export to FrameMaker Pro, Improv, and FrameMaker. VarioData is the only NEXTSTEP app that supports database publishing. With a set of bundled tools, VarioData programs, you need UNiX or your own awk or perl to order to map fields to FrameMaker paragraphs. After a hundred programming hours later, you have a working database-publishing tool.

With VarioData, you can effortlessly export to a FrameMaker Interchange Format (FIF) document, choosing which fields to export, their order, in a simple panel. You can correlate the paragraph format to the target document, then



VarioData offers superior export capabilities for export to FrameMaker.



REVIEWS

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VarioBuilder helps you design and create databases, while VarioData lets you add, find, sort, and modify records. By contrast, both DataPhile and Celebro combine design and access modes in a single app.

The advantage of VarioData's approach is simplicity. Both DataPhile and Celebro are burdened with complex menu hierarchies that are necessary for their combined functionality. Since VarioData segregates design and access commands into separate apps, each component has straightforward menus. Despite the benefits of the segregated approach, we still prefer the ease of switching to design mode on the fly.

VarioData's strong suit is its extended import/export interface, which includes export filters for FileMaker Pro, Improv, WordPerfect, and FrameMaker. VarioData is the only NEXTSTEP app that explicitly supports database publishing with a set of bundled tools. With other programs, you need UNIX tools to roll your own awk or perl scripts in order to map fields to, for example, FrameMaker paragraph tags. A hundred programming or consulting hours later, you might have a working database-publishing system.

With VarioData, you can seamlessly export to a FrameMaker MIF (Maker Interchange Format) file, choosing which fields to export and their order, in a simple Export Text panel. You can correlate field names to the paragraph formats in your target document, then export. Assum-

ing you have set the proper paragraph formats in FrameMaker, the result is a polished, ready-to-print document. VarioData can even export rich text and images to MIF, allowing you to set the final positioning and resolution of exported images in anchored frames.

### Celebro Professional 0.84 (beta)

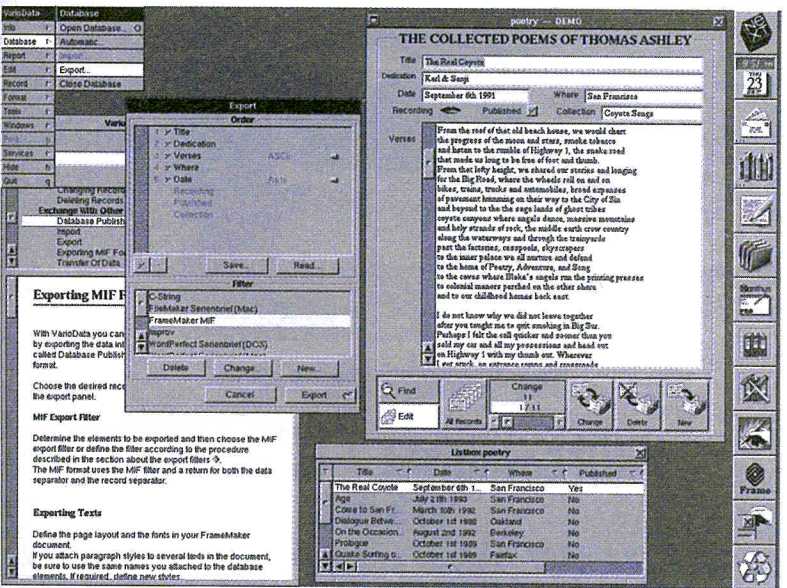
This ambitious database app offers maximum flexibility and features a scripting language, graphing capabilities, and record-level locking for multiuser access. Celebro is the standard version; Celebro Professional allows you to freely distribute stand-alone databases.

\$695 Celebro  
\$995 Celebro Professional

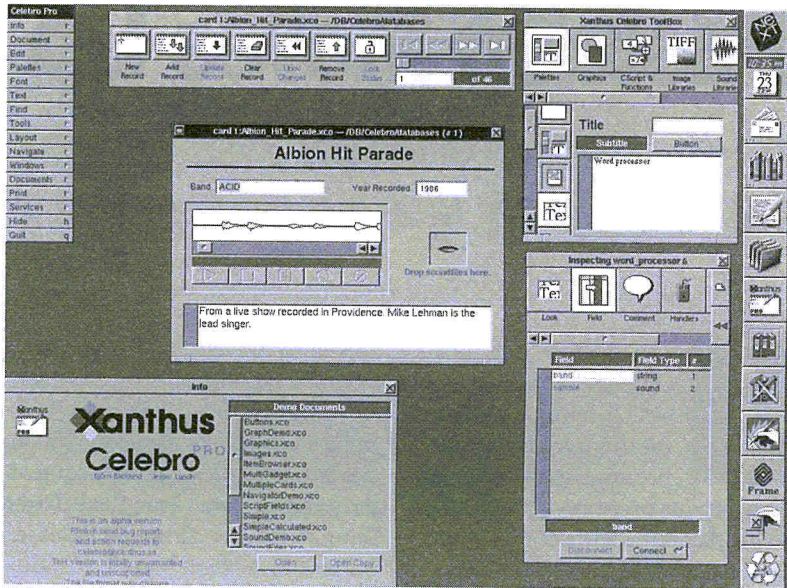
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### Cerebral Celebro

As this review was being compiled, Xanthus, the Swedish developer of CraftMan and Questor, was preparing Celebro, a "high-end" flat-file database that methodically addresses the weaknesses of both DataPhile and VarioData. We looked at Celebro Professional 0.84, an extended version that allows databases to be saved as stand-alone run-time appli-



VarioData offers superior export options. In this example, a database containing poetry is prepped for export to FrameMaker. In two easy steps, you're ready to publish your book.



Celebro Professional provides users with a formidable database-design ToolBox panel (upper right corner). The Hit Parade database illustrates how you can incorporate control buttons and a graphic display of a sound file.

cations for separate distribution. Version 1.0 will be ready in early 1994, according to the company.

Unlike its competitors, Celebro supports multiuser access. Any number of network users can simultaneously read and write Celebro databases. Celebro includes record locking and will let you know when other users are logging in and out.

Celebro also provides extensibility through CScript, a scripting language that lets you customize databases. To achieve HyperCard-like functionality, you can store CScript as text within the fields of a database and connect buttons to these fields. Click a button and the script is executed.

Although CScript is not a true programming language, it includes a wide variety of built-in functions and handlers (functions bound to objects such as buttons), as well as a console that lets you evaluate CScript expressions and a debugger that helps you find and correct errors. Programming niceties include Esc-key expansion of functions, field names, and variables, as well as partial support for EMACS key bindings. Not happy with CScript's built-in functions? You can load libraries of "external functions" written in Objective-C right into Celebro.

You can also drag and drop bar or scatter graphs, meters, and dials anywhere in a layout and connect them to fields to keep databases current. And, unlike DataPhile and

VarioData, Celebro supports the inclusion of summaries in reports.

Given Celebro's broad feature set, it is not surprising that the software's interface is somewhat tortuous. The designers provide relief with a ToolBox panel and an Inspector panel similar to the NEXTSTEP Preferences application. Still, Celebro is the least approachable app in this roundup.

### Summary report

DataPhile and VarioData are proven applications; direct comparisons between the unfinished Celebro and the two shipping apps are not altogether fair. Celebro looks promising, but keep in mind that the market is not standing still. The developers of DataPhile and VarioData are hard at work on improvements, including multiuser access for DataPhile 3.0 and SQL hooks for VarioData 3.1.

For mainstream NEXTSTEP installations that need a solid flat-file database solution, DataPhile remains the app of choice. VarioData is almost as polished; we highly recommend it for anyone who produces frequently revised FrameMaker documents or works with the other applications to which it links. If Xanthus delivers as promised, installations that need extensibility or multiuser access will probably be able to run with Celebro.

SETH ROSS is a NeXTWORLD contributing editor.



# PasteUp Moves Up

*With a new version and a new owner, PasteUp finally lives up to its promise*

by RICK REYNOLDS

It has been a long time coming, but with its latest 2.1 release PasteUp finally lives up to its promise as the premier page-layout program for NEXTSTEP. Actually, with FrameMaker deciding against a port to Intel and Pages still not shipping, it is the only page-layout program available on the platform.

Now, with major improvements in performance and stability, a raft of new features, and a new publisher with a commitment to future updates, PasteUp 2.1 is fully ready for prime time. While it may not offer enough to draw publishing users to NEXTSTEP, it provides sufficient

appeal to prevent defections away from the platform.

As of October 1, PasteUp became a product of Anderson Financial Systems (AFS), which acquired the program from Glenn Reid's Right-Brain Software. Although Release 2.1 is entirely Reid's work, it sports a new price tag – \$495 – and promises from AFS for an interim release by early 1994 and a 3.0 version that will include an API by next summer. (AFS has also announced that it will use PasteUp technology in a word processor it expects to release this year.)

As for 2.1, the most important improvements are in stability and performance. Everything you liked

about 1.1 – the velvety smooth layout interface with drag-and-drop importing, the well-designed inspectors, the simple navigation – is intact. Most of the changes are under the hood.

In 1.1, NEXTSTEP users suffered from a program that crashed too regularly and had text blocks that sometimes seemed to wriggle out of grasp. The new version proved difficult to crash, though we still managed it once about ten hours into a marathon publishing session. For performance gains, Reid tuned PasteUp's text engine for zippier text editing, manipulation, and printing.

## New capabilities

You can now expand or condense type by percentages, called "horizontal scale." You can choose to print only the even- or odd-numbered pages from of any range of pages in a document. With a single mouse click, you can automatically change text to uppercase, lowercase, or mixed case.

Among new features, PasteUp now sports a photo-cropping tool.

A new clone option works like the clone feature in a high-end drawing package. You can save a panel's location and size as a preference between sessions (this sounds simple, but remember that cross-platform competitors Aldus PageMaker and QuarkXPress haven't yet shed their modal dialog boxes). Similarly, you can close panels with a single keystroke.

The new Generate Resource Lists command examines a document and makes a list of all the fonts and images used, saving it to a text file

## PasteUp 2.1



*PasteUp combines the precision of Quark and the ease of PageMaker with lots of thoughtful touches courtesy of NEXTSTEP. Version 2.1 is ready for prime time, despite occasional idiosyncrasies.*

**\$495; \$249 academic; \$25 upgrade from any prior version**

Anderson Financial Systems, 909 Summeytown Pike #207, Springhouse, PA 19477, 215/653-0911, 215/653-0711 fax; PasteUp@afs.com.

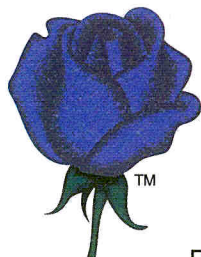
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- ☐ 17) Communications Week
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- ☐ 19) Computerworld
- ☐ 20) Forbes
- ☐ 21) Fortune
- ☐ 22) Infoworld
- ☐ 23) LAN Times
- ☐ 24) MacUser
- ☐ 25) Macweek
- ☐ 26) Macworld
- ☐ 27) Open Systems Today
- ☐ 28) PC Magazine
- ☐ 29) PC World
- ☐ 30) Personal Workstation
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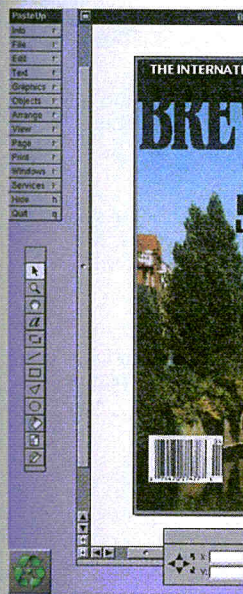
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# NEXTWORLD



PasteUp 2.1 has the same performance and responsiveness,

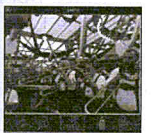
for easy communication with the service bureau.

PasteUp can now page PostScript (.ps) files into separate PasteUp documents. Importing RTF files has been improved. PasteUp now supports the RTF markup language for

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Screen Machine  
NeXTWORLD Board  
is a real-time true  
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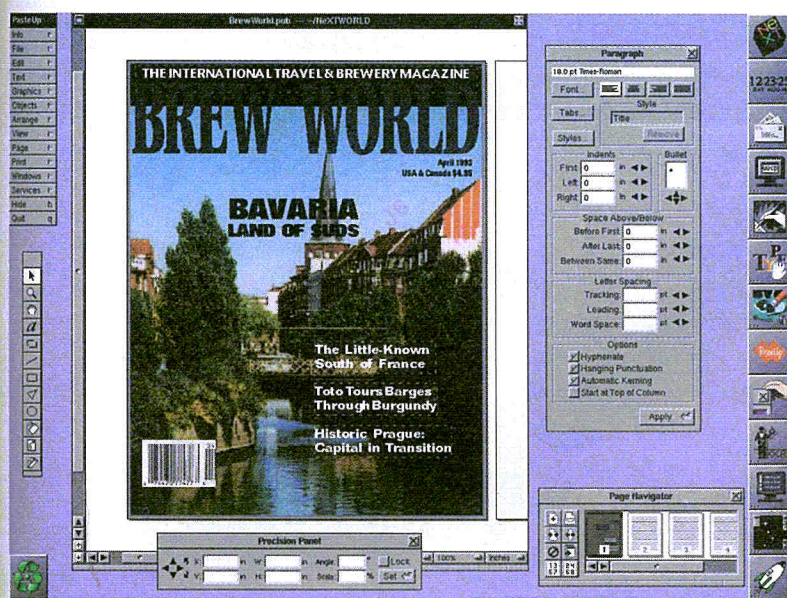


1.800.45

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## REVIEWS



PasteUp 2.1 has the same excellent interface as the original program but with improved performance and responsiveness, especially in text handling.

for easy communication with a service bureau.

PasteUp can now import multipage PostScript (.ps) files and bring them into separate PasteUp pages. Importing RTF files has also been improved. PasteUp now supports a markup language for importing

tagged and formatted text; this addition is especially helpful in cases in which PasteUp receives text programmatically from some other application rather than manually from a user. For the first time, PasteUp provides a facility for templates, which we found easy to use. Text color is

now supported as a paragraph-styles feature.

#### Are you being served?

PasteUp provides a new service that can save text as a new document or append it to a previous document. Like the new markup language, this feature is especially useful when PasteUp is being handed data by some other program.

Through the use of this service, along with the markup language and templates facilities, PasteUp could easily become a database-publishing package. All it needs is the database object, DBMerge, that Steve Jobs demonstrated in his NeXTWORLD Expo keynote presentation in May 1993. AFS intends to offer DBMerge as a separate product in the near future.

Compared with the best layout programs on other platforms, PasteUp still lacks some important features. QuarkXPress 3.2 has built-in support for the EfiColor color-management system from Electronics For Imaging. With the release of Here's Color from Here, similar technol-

ogy is now available for NEXTSTEP. We'd like to see it supported by, and even bundled with, PasteUp.

Quark also offers a workgroup publishing system that coordinates a team of publishing professionals as they work on a joint publication. PasteUp offers no support for workgroup publishing, a significant shortcoming on a platform noted for collaborative work.

Despite these defects, PasteUp 2.1 is a strong product and answers the major complaints of early PasteUp adopters. It is certainly our first choice for publishing tasks under NEXTSTEP. And it can only get better with the enhancements promised by AFS. ♦

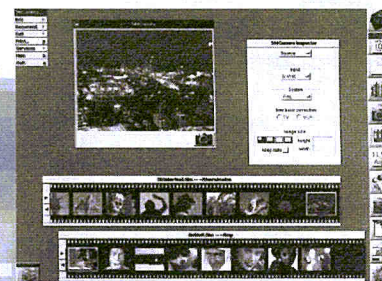
RICK REYNOLDS is a contributing editor for Publish and NeXTWORLD.

# Now This Will Open Your Eyes.

Screen Machine II 1993 NeXTWORLD Best of Breed is a real-time true-color or grey scale video digitizer and a multimedia board capable of displaying live video in any size at any monitor position. It combines high-quality image recording, digital video signal processing, and real-time video display on a single board for your Intel 486-based PC running NEXTSTEP 3.1. It is the first video overlay board to support non-interlaced resolution of 1024 x 768 at screen frequencies of up to 76Hz in graphics mode.



1.800.452.7608



SMCamera gives you the option to save your image in Screen Machine FLM or TIFF format and even directly print, cut and paste active video data. Since it is using the Screen Machine's overlay board, pictures are always in color independent of your system. It can also specify the picture area, color components, compression, image format, and many more.

SMAimator allows you to record and playback video sequences using data compression. Playback does not require a Screen Machine board.

SM-TV a three-in-one external device option that turns your computer to a completely digital, controllable, cable-compatible TV tuner and a decoder that can convert video text into ASCII format as well as a complete stereo pre-amplifier.

## Screen Machine II for NEXTSTEP Intel



Alembic Systems International Ltd.  
14 Inverness Drive East, Suite G-228  
Englewood, CO 80112  
Tel. 303.799.6223 • Fax. 303.799.1435  
E-mail. info@alembic.com

Circle 88 on reader service card



# Peas in a Pod?

by M CARLING and DAN LAVIN

Intel, the chip maker, has a division that produces computer boxes for integration into complete systems by other resellers. No systems are sold under the Intel name.


Several resellers are marketing Intel's GX/Pro to the NEXTSTEP community. Individual integrators take the GX box and add memory, floppy and hard drives, and a keyboard, mouse, and monitor. The choices they make in peripherals, how they sell and support their products, and the price tag they put on the package all affect the value received.

The GX/Pro has a higher degree of integration than most PCs. Included on the motherboard are ATI Ultra Pro graphics, 16-bit sound, and a SCSI controller. NEXTSTEP 3.1 drivers for these are newly available. Newer GX/Pros with Rev. 6 ATI controllers display 1120-by-832 16-bit color. The current SCSI controller has no internal SCSI connector and will not boot from a SCSI device, but this may be fixed in later models. Some machines overcome these deficiencies by adding an EISA SCSI controller, others by using an IDE hard disk. We recommend the former except for those on the tightest of budgets. The GX/Pro has one ISA and two EISA slots that, given the integration on the motherboard, should accommodate most users.

Performance of the GX/Pro is comparable to other high-end 486 systems. Graphics performance is typical for systems with ATI graphics, which is slower than NeXT hardware, JAWS, or Wingine PC graphics. Disk and memory size are the choices that will most affect the performance of any given GX/Pro. A fast SCSI controller and hard disk will perform significantly faster than an IDE drive, as shown in the accompanying box scores. As always, because NEXTSTEP is memory intensive, more memory will improve performance. ♦

**Box Score**

**Workstation 2000 W2000-PGX02**



**\$7223 (as configured)**

**Configuration**  
DX2/66; 24MB RAM; 453MB IDE drive; 1120-by-832 16-bit ATI graphics; 1 ISA, 2 EISA slots; 20-inch Sony color monitor.

**NeXTWORLD benchmarks**

MIPS	V-V	D-V	Disk	Webster
1.47	0.75	0.47	0.98	1.17


**Performance**  
Good performance from the GX chassis. The performance of this GX/Pro configuration suffered slightly due to choice of IDE drive.

**Video**  
ATI graphics doesn't match JAWS or Wingine but is adequate for most applications. This GX/Pro included the new Rev. 6 ATI controller, which is slightly faster and capable of displaying 1120 by 832 pixels. Bright color, slightly jittery monitor.

**System Design**  
GX has great construction and form factor; it's easy to service. Clunky keyboard supplied.

**NEXTSTEP orientation**  
NEXTSTEP 3.1 preinstalled (though not included in price) but without drivers for on-board sound and SCSI. Knowledgeable tech support.

**Support**  
One-year warranty, ten-day money-back guarantee, toll-free support planned.

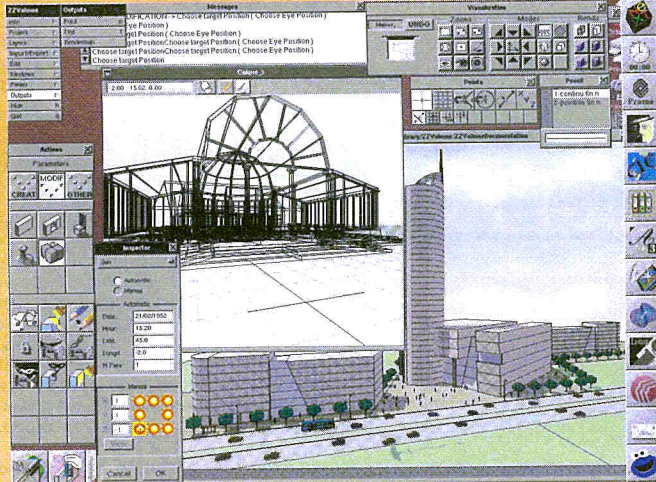


**Value**  
Lower price of this configuration reflects IDE choice. Includes large monitor. Solid value.

**Contact**  
Workstation 2000, 3921 Concordia, Fallbrook, CA 92028. 619/723-4827.

**NEXTWORLD**  
THE BEST OF BOTH WORLDS

## A Simple Approach to Power and Creativity in Architectural Modeling



ZZ Volume is the premier architectural design application for NEXTSTEP that enables you to create three-dimensional spaces—including the entire buildings—and to visually tour the spaces you created. For architects, interior designers, and anyone who needs to present space, this tool will become an indispensable aid. Some of the features are unlimited layers, pencils and working space • network and workgroup ready • various view selections • objects library • flexible reference plane • various zoom modes • various functions to create objects • project database • AOC-specific precision level • automatic area/distance/volume/weight calculations • DXF, DEF, RIB, and EPS exports • DXF, DEF, EPS and Architrion imports • A3-to-A0 size HPGL-compatible plotters support.

# ZZ


## volume

Alembic Systems International Ltd.  
14 Inverness Drive East, Suite G-228, Englewood, CO 80112  
Tel. 303.799.6223 • Fax 303.799.1709 • E-mail info@alembic.com

Circle 27 on reader service card

**Box Score**

**Continental Professional NeXT Workstation**



**\$7610 (as configured)**

**Configuration**  
DX2/66; 32MB RAM; 520MB SCSI drive and Bustek EISA SCSI controller; 1024-by-768 16-bit ATI graphics; 1 ISA, 2 EISA slots; 17-inch Sony color monitor; SMC Ethernet card.

**NeXTWORLD benchmarks**

MIPS	V-V	D-V	Disk	Webster	Compile
1.63	0.73	0.45	1.76	1.17	1.32


**Performance**  
Fast SCSI and more memory make the difference in jazzing up GX design. Middle of the pack for DX2/66 machines.

**Video**  
Suffers from slow ATI graphics. This GX/Pro included the slightly older Rev. 3 ATI controller, which is slightly slower and displays a maximum of 1024 by 768 pixels. Future models will include later revs.

**System Design**  
Medium-sized monitor is crisp and steady. Clunky keyboard. Compact GX chassis.

**NEXTSTEP orientation**  
The machine arrived with all of the latest NEXTSTEP drivers for this model preinstalled. Knowledgeable tech support.

**Support**  
Extensive documentation, one-year warranty, toll-free technical support, 30-day money-back guarantee.



**Value**  
Not the low-price leader, but a good value with the SCSI card.

**Contact**  
Continental Computer Systems, 835 North Mountain Rd., Newington, CT 06111. 203/953-8649.

PHOTOGRAPHS BY SHARP SHOTS

# TAKE

If you're moving  
popular word processing  
platform running  
more productive  
and support for  
more information



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service. Clunky key-

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puter Systems, 835  
Rd., Newington, CT  
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# TAKE THE NEXTSTEP WITH WORDPERFECT.

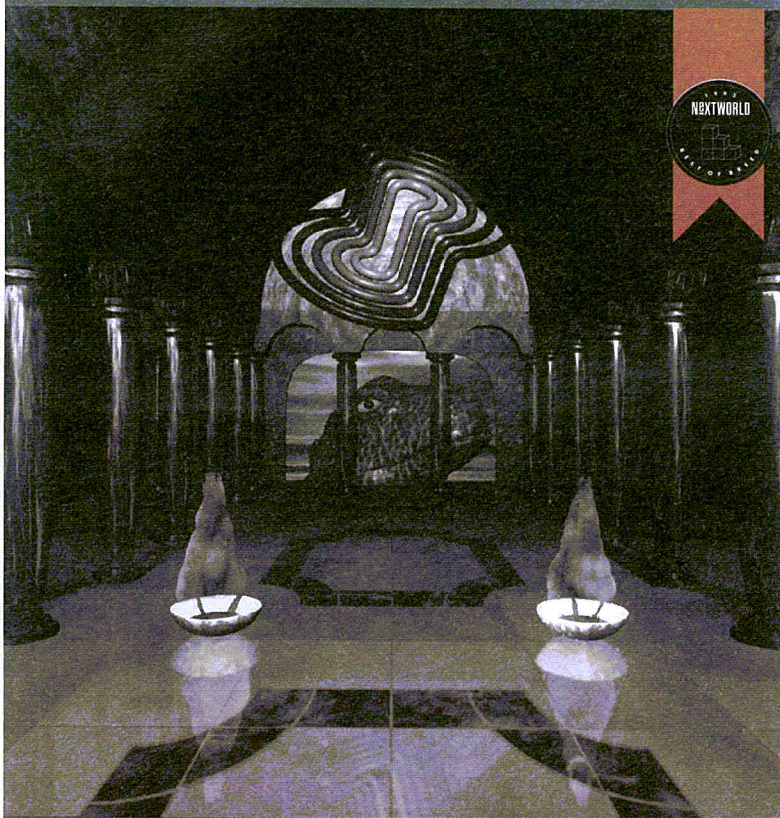
**WORDPERFECT 1.0.1 IS NOW AVAILABLE FOR INTEL PROCESSORS RUNNING NEXTSTEP.**

*If you're moving up to the power of the world's only object-oriented system software, take one more step to the world's most popular word processor. WordPerfect® for NEXTSTEP brings all of the power and convenience of WordPerfect to the Intel platform running NEXTSTEP, combined with features such as drag-and-drop editing and integrated on-line help. You'll work more productively because WordPerfect capitalizes on the NEXTSTEP environment, including true WYSIWYG screen displays and support for PostScript and other fonts. Of course, you also get WordPerfect's legendary customer service and support. For more information, call WordPerfect Corporation at (800) 526-3851. We'll show you why WordPerfect should be your next step.*

# WordPerfect®



## Discover A New Era In 3D Modeling



Winner of the 1993 NeXTWORLD Best of Breed Award, solidThinking MODELER is a professional 3D modeler for NeXTSTEP platform featuring complex primitives with full NURB support, skinning, morphing, extruded and lathed profiles, curve lofting, editable 3D text, generation of shadows and reflection maps, and unlimited resolution. Now shipping version 1.2 for both Intel and NeXT platforms.



**solidThinking® MODELER**



Exclusively distributed in North America by  
Alembic Systems International Ltd.  
Tel. 800.452.7608  
Fax 303.799.1435  
info@alembic.com

Developed by  
GESTEL Italia srl  
Tel. ++39 444 964974  
Fax ++39 444 964984  
info@solid.gestel.it

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Circle 91 on reader service card

## Simple Net Manager

**C**orporate customers demand good tools to help keep their networks up and running. After all, mission-critical custom applications are the ones you can't do without. Although NeXT innovations like NetInfo and the graphical administration tools help get networks up and running quickly, they don't offer much assistance in monitoring and diagnosing the problems that inevitably occur.

To fill this gap, Ridgeback Solutions now offers NetWatch, a graphical Simple Network Management Protocol (SNMP) network manager for NeXTSTEP. (SNMP is a widely adopted standard for devices on networks running the TCP/IP protocol to report statistics about their status.) Software "agents" run on clients, reporting blocks of information known as Management Information Bases, or MIBs.

NetWatch can be used to monitor any devices with SNMP agents supporting MIB-I, MIB-II, or Ridgeback's own SNMP AGeNT. When used with AGeNT, which is available for NeXTSTEP and SunOS 4.1.x, NetWatch can monitor system variables such as file-system usage and swap-file size. NetWatch then uses this information to detect common non-network problems that can cause applications to fail.

NetWatch offers three major functions. The Topology Maps feature works with your favorite NeXT drawing program to let you build a graphical representation of the network. Nodes in the NetInfo database can be automatically added to the map. The Query Panel helps you set up one-off or periodic queries of any MIB variable on any network device. When MIB variables reach the threshold values that you set, alarms can notify you by flashing icons on the network map, dialing a pager, sending e-mail, or passing alarm data to an external program.

Ridgeback says that NetWatch is easy to use, and our tests certainly confirmed its claim. Within an hour of opening the box, we were monitoring a selection of key nodes on our network, including several NeXT-stations, Sun and HP workstations,

### NetWatch 1.0



A simple-to-use SNMP network manager for use in smaller, single system-administrator installations. Works well and as advertised.

**\$1995, including ten copies of AGeNT; additional copies of AGeNT at \$120 per node**

Ridgeback Solutions, 23715 W. Malibu Rd. #76, Malibu, CA 90265. 310/456-6094, 310/456-9715 fax; info@ridgeback.com.

and Cisco routers – all on a network map whipped up in Diagram! 2. Had these machines all been in the NetInfo database, setup would have been even faster. During our test, the alarm facilities worked as advertised. AGeNT, however, was a little trickier to install.

The comprehensive documentation explained all the possibilities of the tools at hand, though familiarity with SNMP and TCP/IP networking is assumed.

NetWatch doesn't aspire to be the ultimate network-management tool. It emphasizes alarms and real-time monitoring, rather than statistical collection and analysis. It's designed for use by a single sysadmin who manages a moderate number of nodes. These might be all the nodes in a small network, or a subnet, or key nodes selected from a larger network.

In larger networks, administrators might miss some features that are starting to appear in high-end packages on other platforms. For example, automatic network discovery finds network nodes, even if they're not in NetInfo. Alarm correlation prevents the failure of one key router from setting off a cascade of alarms from all the other affected nodes. NetWatch lacks both of these features. And they would come at a price: increased complexity, longer set-up time, and a price tag two to five times the cost of NetWatch.

NetWatch is an application that has a clear mission in life and delivers admirably. It's a useful tool, and an excellent value. ♦

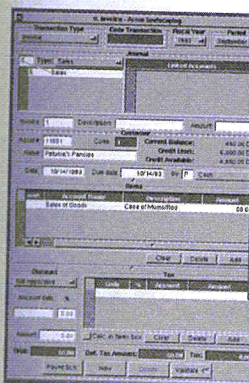
by ROB WILEN

## Accounting

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first multiuser client-se ing package for the pla Flow provides true d accounting and will needs of medium-size Unfortunately, it lacks features, such as inver

There are two par Flow: QuantaFlow, the and QuantaAdmin, tl server. QuantaAdmin arena in which Quanta work; here, you define database – company i fiscal year, and accour Access privileges for ac and administrative fea server are also maintai



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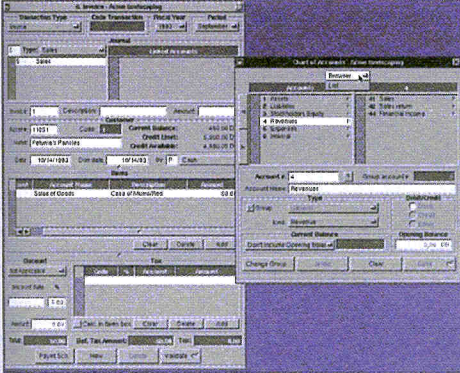
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I L E N

# Accounting for Taste

**A**lthough NEXTSTEP sports several single-user finance and accounting programs, Sumeris Technology has produced the first multiuser client-server accounting package for the platform. QuantaFlow provides true double-entry accounting and will satisfy many needs of medium-sized businesses. Unfortunately, it lacks a few critical features, such as inventory control.

There are two parts to QuantaFlow: QuantaFlow, the client software, and QuantaAdmin, the database server. QuantaAdmin provides the arena in which QuantaFlow does its work; here, you define an accounting database - company information, fiscal year, and accounting periods. Access privileges for accounting data and administrative features of the server are also maintained here.



The Transaction window is well organized and allows for entry of all elements related to the transaction.

QuantaFlow is the actual accounting environment. Sumeris took some interesting approaches to organizing and displaying information that may seem confusing, but the interface becomes intuitive over time.

Conforming to the standard practice in accounting software, QuantaFlow revolves around the Chart of Accounts. There are four types: General, Accounts Receivable (AR), Accounts Payable (AP), and Other. Accounts are organized into groups and assigned one of six categories. Unlike other accounting systems, which record customer and vendor records with separate journals that post to general-ledger accounts, Sumeris chose to make these accounts subsidiary to their respective AR and AP general-ledger accounts. Posting to specific revenue or

expense accounts is handled at the time of the transaction entry. Data entry takes place in a series of transaction windows that follow a standard layout, making it easy to bounce from one type to another without missing a beat. Once the data is in, it's easy to get back out with included reports that follow standard formats for income statements and balance sheets. Specific journals for customers or vendors, as well as general-ledger accounts, can also be printed in concise, easy-to-read formats.

With its impressive features and innovative approach, QuantaFlow is a solid accounting package for small-to medium-sized businesses. If you are in the business of providing accounting services, QuantaFlow will serve you well with its options for multi-user and multicompny usage.

Version 1.1, however, does have some flaws. Data entry is post-transaction. Unlike Peachtree's Insight Accounting or GreatPlains' Accounting, both for the Macintosh, there are no invoice-entry windows that allow for direct invoicing. Payroll and inventory provisions are also missing. The bottom line is that QuantaFlow is not yet a complete solution for the everyday accounting needs of most businesses. For now, the package will meet the needs of companies that require post-transaction data entry and handle tasks like inventory and payroll manually. If you are seeking an integrated solution, you may prefer to wait for QuantaFlow to expand its functionality in future releases. ♦

by DONALD WILSON

**QuantaFlow 1.1**  
♦ ♦ ♦  
A solid client-server-based double-entry accounting system for smaller businesses. Its innovative approach to computerized accounting is a win in the long term but lacks certain important features.  
**\$750**  
Sumeris Technology, 7310 Cactus Curve, Chanhassen, MN 55317. 612/474-6505.

## Yes Bill, you CAN graphically edit EPS and PS files from ANY application on ANY platform!

**Bill didn't know it, but he made a mistake. A mistake that even the folks who invented PostScript said couldn't be undone.**

**Poor Bill.**

Imagine opening a PS or EPS file from any application, from any platform, and graphically changing colors, changing text, lines, weights, scales, sizes and shapes. Then, when you're done making the necessary changes, save it back to an EPS or PS file or drop it into another application for placement.

A process unheard of until now.

Introducing Tailor. A powerful PostScript manipulation package with these features and many more, all based on the most advanced operating environment available today -

**NEXTSTEP.**

**Tailor. The key to PostScript.**

**Alembic Systems International Ltd.**  
800.452.7608  
info@alembic.com

Circle 76 on reader service card



## TaskMaster 1.5



\$1395

Lighthouse Design, 2929 Campus Dr. #250, San Mateo, CA 94403. 415/570-7736, 800/366-2279, 415/570-7787 fax; taskmaster@lighthouse.com.

The first general release of Lighthouse Design's project-management package brings numerous interface and other improvements over its limited-release 1.0 version (see "Project Progress," *NeXTWORLD*, September 1993). The single Project panel is now two downsized inspectors, with functions that are better organized for easy operation. The outline views now support drag and drop for setting dependencies, multiple selection for assigning resources, and pop-up lists for setting constraints. More options are available for user configuration, including variable time-display and outline-numbering formats. New filter services support direct import and export of Microsoft Project and Claris MacProject files. Another filter provides easy one-way PERT charting using Diagram! 2, though the absence of true interactive charting remains TaskMas-

# Reviews Desk

**Scale is the name of the game in the NEXTSTEP marketplace. Small products with appropriate expectations and limited overhead are bringing in good income for many small developers. Often, a consultant can transform a solution for a single customer into a commercially available palette of objects or even a shrinkwrapped product. The Reviews Desk gang suggests that all consultants look in their bag of tricks for such opportunities. Remember, disks cost only \$1 each. — DAN LAVIN**

*This month's gang includes: ELIOT BERGSON (EB), SIMSON L. GARFINKEL (SLG), DAN RUBY (DR), AND MYSELF, DAN LAVIN (DL).*

ter's biggest flaw. With this release, TaskMaster takes its place among the premier NEXTSTEP business applications and becomes competitive with leading project-management programs on other platforms. We are raising its rating from three to four cubes. **DR**

## SuperDebugger 3.6



\$99

Impact Software Publishing, 36-32 34th St., Long Island City, NY 11106. 718/472-0600,

800/822-3385, 718/472-0160 fax; suggest@impact.com.

SuperDebugger 3.6 is a graphical front end for the GNU debugger (GDB) that NeXT provides with the NEXTSTEP Developer Edition. The software integrates program editing and debugging much as the GDB mode in GNU EMACS does, but with a spiffy graphical user interface that includes browsers for all of a program's functions, stacks, break points, and variables. The interface, while a little cluttered, is much easier to use than GDB's command-line mode, though it does take some getting used to. The program features extensive on-line help, a great aid in getting started. Unfortunately, as good as it is, SuperDebugger is still no match for interpreted development environments. **SLG**

## conText 1.0



**\$919 (with one spelling dictionary); \$474 each spelling dictionary; \$227 each translation dictionary**

Lots Schneiders Kraft GbR, Werderstraße 14, 67655 Kaiserslautern, Germany: 49/631/109.91, 49/631/109.92 fax.

Translation is more than looking up words; it's words working together in context. So we had high hopes for conText, a self-described "tool for spell checking and translation needs." We looked at the first version but found it to be of limited use. Highlight a word you want translated in the document window and the Translation panel gives you a list of equivalents from which to choose — but without any grammatical guidance as to gender agreement, plural forms, or subtle differences in usage. Some hyphenation suggestions are downright wrong. And this first shipping

rev offers German-only documentation (an on-line English help system provides little more than basic assistance). We would like to see hypertext search capabilities to make conText more useful. As it stands, it allows you to translate into your mother tongue but doesn't help you effectively write in another. **EB**

## BarCodeKit 2.0



**\$495 (basic edition with five bar codes); \$1795 (comprehensive edition with 17 bar codes); individual bar codes from \$149 to \$695**

Hot Technologies, 75 Cambridge Pkwy., Cambridge, MA 02138. 617/252-0088; Robert\_La\_Ferla@hotmail.com.

Hot Technologies has palettized its BarCodeKit and changed its pricing structure for the newest release. Perhaps the ultimate example of niche-market ObjectWare, BarCodeKit is a must-have for those who need to generate bar codes for documents, envelopes, or inventory tracking — and not much use for anyone else. The objects, however, perform as advertised. A variety of new target/action methods makes it considerably easier to develop bar-code applications from within NeXT's Interface-Builder application. Release 2.0 ships in fat-binary format. **SLG**

## DiskMaker 1.5

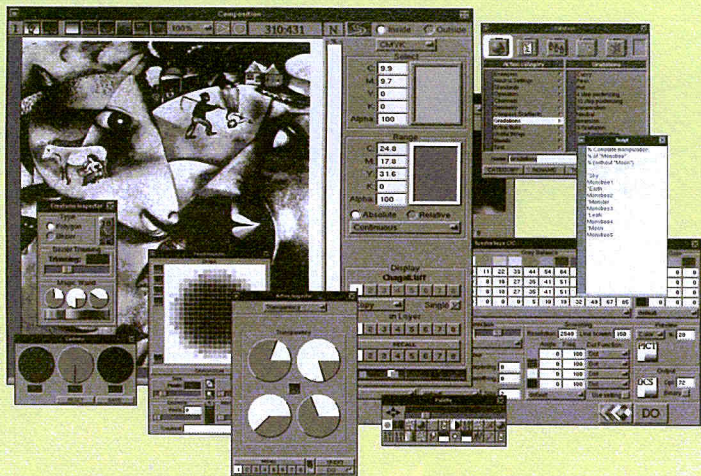


\$115

SmartSoft, 2220 E. Linnwood Ave., Milwaukee, WI 53211. 414/964-8864, 800/424-8864, 414/964-4672 fax; smartsoft@mixcom.com.

Anyone who uses standard methods to copy disks is accustomed to the long delays as UNIX chunks through each file individually. And unless you do things just right, you run the risk of trashing file-creation times, permissions, and disk labels. SmartSoft solves all of these problems with DiskMaker, a speedy utility for mass duplication of diskettes. First, DiskMaker creates a file with an "image" of the disk to be copied. The user then calls up any of these disk images on file, inserts blank floppies, and the computer starts spitting out exact duplicate after exact duplicate. The program worked flawlessly in our tests, creating copies good enough to fool the computer. DiskMaker's cost and two-step process make it most useful for those making multiple copies, such as developers and corporate MIS personnel. **DL**

TO SOME, IT MAY JUST BE ANOTHER NEXTSTEP IMAGE PROCESSING PROGRAM. FORTHOSE IN THE GRAPHIC DESIGN & PRE-PRESS INDUSTRIES, IT'S THE TOOLS OF THE TRADE.



## Compose In Color

40-bit CMYK, TIFF, EPS, Scitex™ CT and DCS image processing • Concurrent multiple areas selection • Magic wand with three tolerance parameters • Direct HELL™ shuttle access module, CIC shareware modules, various scanner and printer drivers • Pressure sensitive graphics tablets support • Monitor calibration • Image statistics • Background saving • Image extractions • Icon-driven database to store and call actions, selections, scripts, pencils and palettes • Composition layers • SpectreSepe CIC™ — the state of the art color separation and correction module • DCS, TIFF, EPS and Scitex CT outputs.



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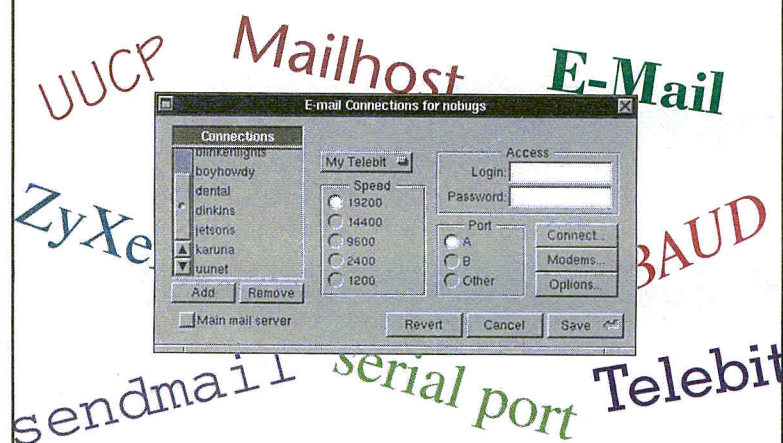
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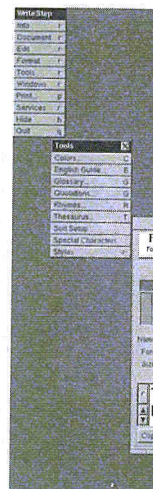


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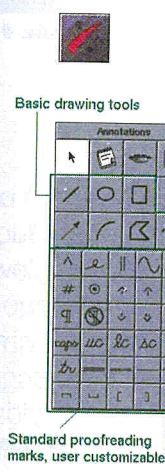
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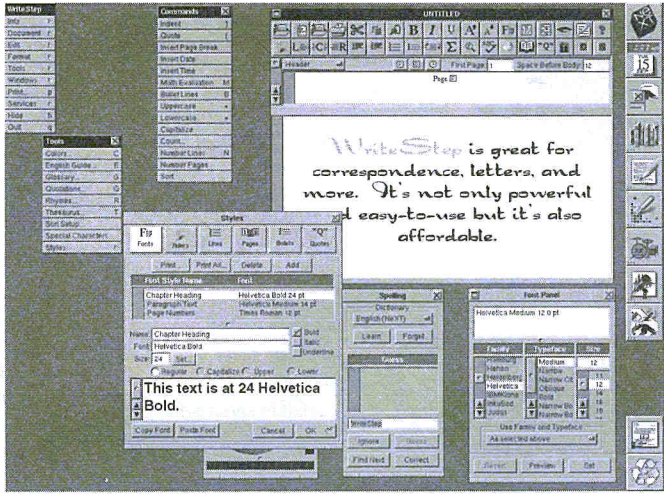
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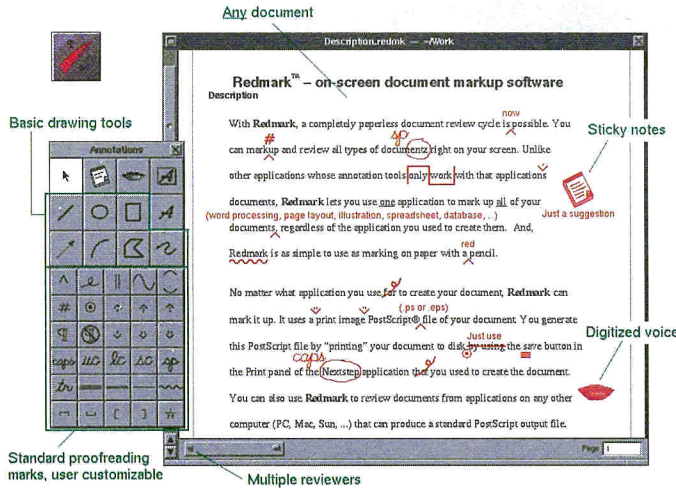


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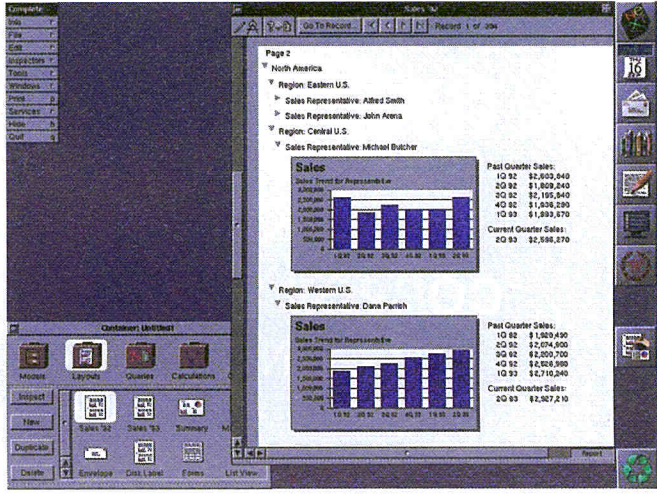
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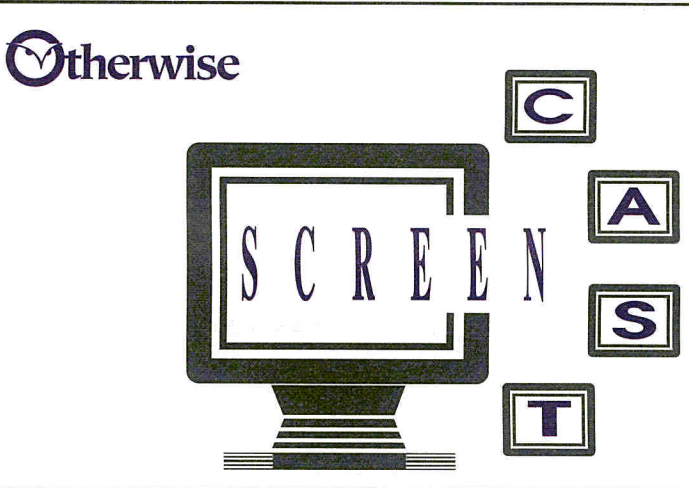


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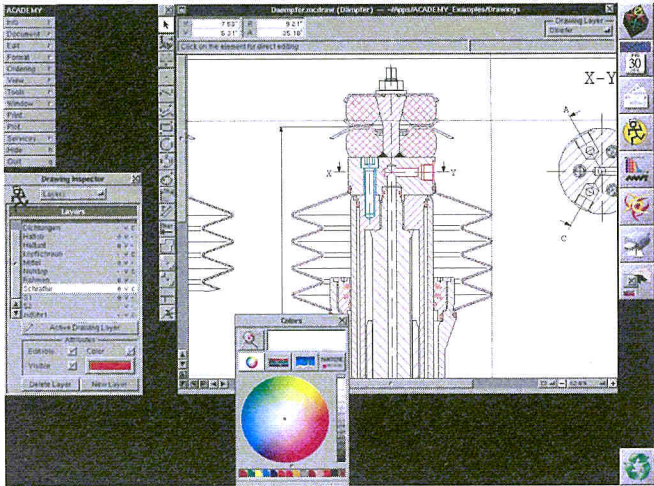


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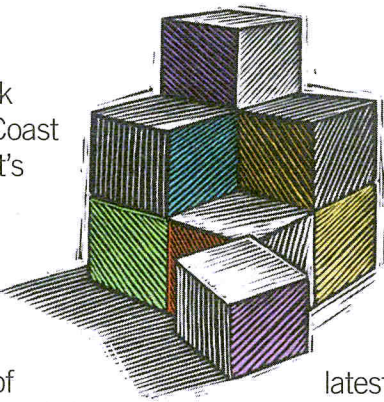
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## NEXTSTEP

*East Coast Developer Conference*

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AWBNX01



I am one of those eccentric loners who used to think that the NeXT was a personal computer. For a while, this was not such a peculiar notion. My NeXT did everything my Mac did except crash five times a day. And it did it, moreover, with far greater speed, elegance, integration, and style. Also, despite the tunnel vision of the mainstream press, it seemed to me that there was plenty of software to support my diverse digital endeavors.

My Cube was deficient only in its tendency to further bloat my already regrettable sense of superiority.

Then, several months back, I moved into a migratory phase during which I kept down what I could carry. I boxed my Cube, sent it back to Wyoming, and took up full-time cerebral residence in my PowerBook. Like Moses, I was on the road longer than expected.

Only this week (in early October) did I again see the Dock icons blossom along the edge of a black frame. But now everything else is different.

For one thing, now that NeXT is a software company, my beautiful NeXT is something of a black elephant. I'm hanging onto it (these babies are going to be the Duesenbergs of antique computerdom some day), but its software seems stranded in space. It's hard to believe that many of the struggling NEXTSTEP developers are going to put much energy into upgrading their Motorola software now that there's a permanent lid on the (small) number of units in their market.

In fact, many shrinkwrappers aren't going to be putting their energy into anything NeXT-related. Two of the mainstays, AppSoft and Right-Brain, have packed it in, while others seem to be cutting back. If the future for the people who write general productivity apps is dim, what does that

say for the future of the people who use them?

In the Beige New World, there may be very little that NEXTSTEP offers a single guy, unless he happens to be the MIS director of a futures brokerage. It's all objects as far as the eye can see. Where, for example, is a word processor in all this? Even though I'm fairly nerdy for a former cowman, I'm not going to try and roll my own word processor out of some piece of ObjectWare.

When NeXT woke up and realized that the only gal who'd dance with 'em was the custom-apps market, I asked Steve Jobs what this meant for the commercial developer. He insisted that once the platform gained ground under dedicated in-house systems, a larger market would develop for general-purpose NEXTSTEP software. In the long run, he may be right. At the moment though, the tide's still going out.

Software is not the only problem a solitary NEXTSTEP diehard faces. From what I hear, unless you've got a lot of time to dink with hardware debugging, these soulless new machines may undo you. (As I was finishing this column, the ace wireheads at NeXTWORLD finally delivered a loaner PC for me to use. I'll report on my experiences in future columns.)

I go on believing that NEXTSTEP has a future. I even believe there's a chance that Apple and IBM might swallow real hard and turn to NeXT after Taligent has failed to produce anything usable. (Their alternative, after all, would be Microsoft.) I'm just beginning to wonder if it is a future that will be of any interest to single guys like me. ♦

JOHN PERRY BARLOW, the Helen Gurley Brown of the NeXT world, appears in this space every issue.

## NeXT and the Single Guy

JOHN PERRY BARLOW

## The Plot Thickens

NEXT GAMES

by SCOTT KIM

Scientists and engineers use mathematical software like Mathematica to plot pictures of formulas. Plots often reveal patterns that are not obvious in the original formulas.

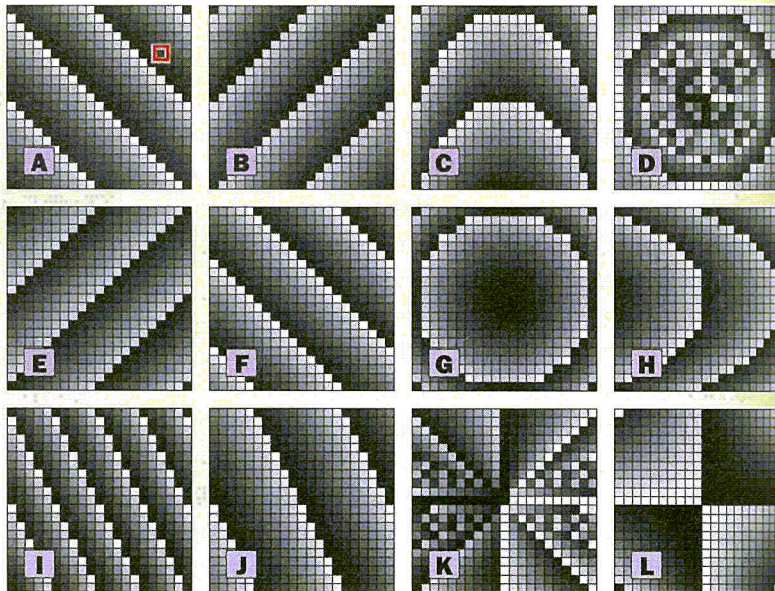
Twelve formulas and their plots are shown at right. To turn each formula into a plot, I computed the value of the formula at each pixel in a square with coordinates ranging from (-1,-1) at the lower left corner to (1,1) at the upper right corner. For example, the pixel outlined in red in Figure A has coordinates  $x=.7$ ,  $y=.5$ , so the value of the formula  $x+y$  is 1.2. Then I forced all values to be between 0 and 1 by taking the difference between the value and the next lower integer (for instance, 1.2 becomes .2; -1.2, minus -2, becomes .8). Integers become 0. Finally, I converted values into gray levels, in which 0 is black and .999 is white. In our example, the red pixel has value .2, which becomes dark gray.

### CONTEST

Each formula at right matches just one plot. For example, Formula 1 matches Plot A. Can you match the other formulas with their plots? Write your answers in the blanks at the right. Hint: Look at pixels where  $x=0$  or  $y=0$ .

Up to ten lucky winners will receive a NeXTWORLD T-shirt. Address entries to Puzzle Editor, NeXTWORLD, 501 Second St., San Francisco, CA 94107. Or fax us at 415/978-3196. And while you're at it, write us a note about the magazine. Entries must be received by December 15, 1993.

The answer to the "Bureaucratic Maze" puzzle in the October issue is: A-H-B-C-F-M-I-N-P-Q-T-U-W-L-E-K-D-G-J-Y-S-V-R-X-O-Z. Kudos to Steven Trainoff at UC Santa Barbara, who wrote a "simple recursive descent solution" and sent us the source code!



- |                      |                        |                             |                         |                    |
|----------------------|------------------------|-----------------------------|-------------------------|--------------------|
| <u>  </u> A          | 1. $x+y$               | <u>  </u> 2. $x+y+.5$       | <u>  </u> 3. $x-y$      | <u>  </u> 4. $y-x$ |
| <u>  </u> 5. $2x+y$  | <u>  </u> 6. $x+(y/2)$ | <u>  </u> 7. $x*y$          | <u>  </u> 8. $x/y$      |                    |
| <u>  </u> 9. $x+y^2$ | <u>  </u> 10. $x^2+y$  | <u>  </u> 11. $1/(x^2+y^2)$ | <u>  </u> 12. $x^2+y^2$ |                    |

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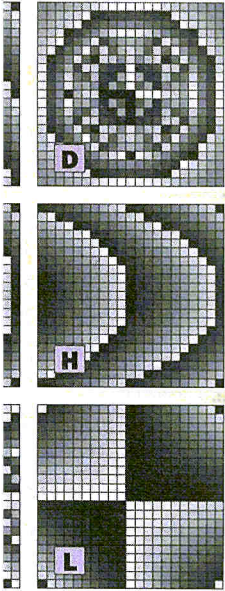
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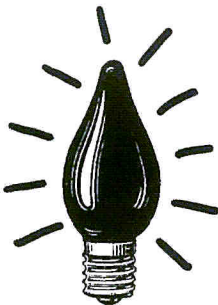
\_\_\_ 4.  $y-x$   
\_\_\_ 8.  $x/y$   
 $y^2$ ) \_\_\_ 12.  $x^2+y^2$

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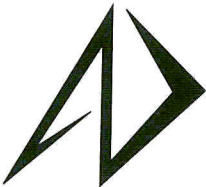


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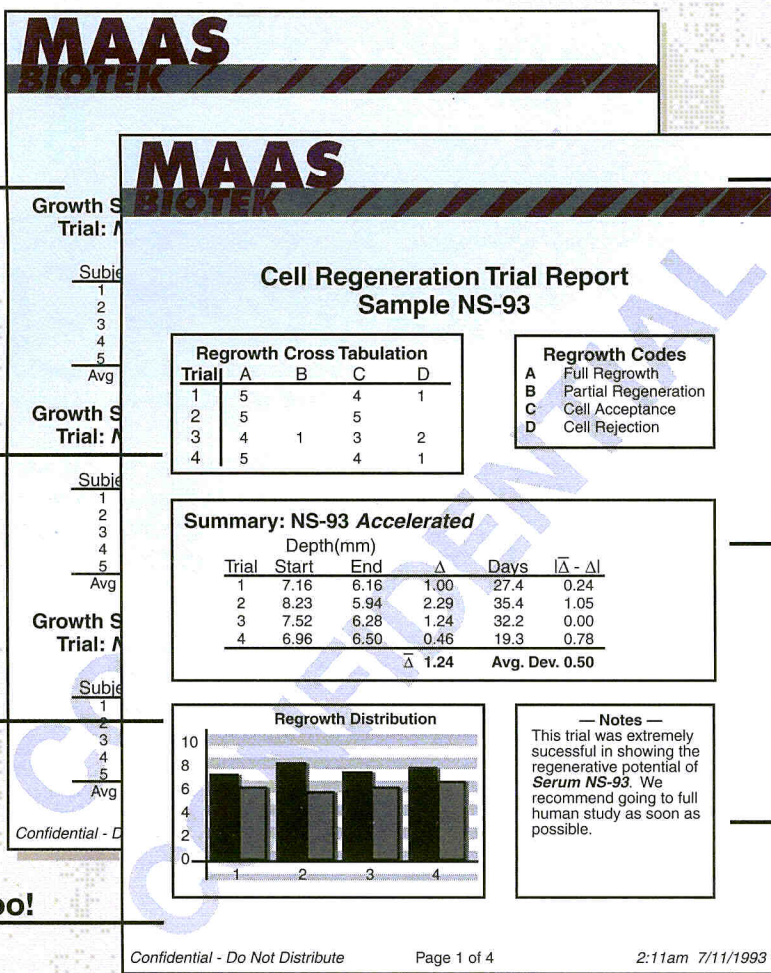
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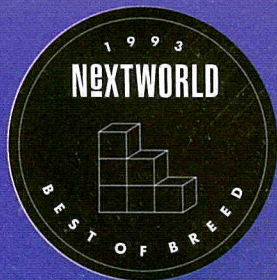
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**NEXTWORLD**

**NEW**

NeXT stopped selling upgrades for '030-based NeXTcubes on November 1, 1993. Users who now upgrade '030- to '040-based NeXTcubes will lose support for their optical disk.

Datrix Corporation is shipping beta releases of two of the modules in its Datrix5 Accounting software for NeXTSTEP. The General Ledger and Accounts Receivable, priced at \$6,000 each. Final releases are due in the first quarter. The other modules in the Datrix5 suite, including Inventory, Purchase Order, Sales Order, and Billing, will be available in the second quarter. Datrix: 602/7421; e-mail: info@datrix.com

CuillaMartin has licensed code for DefaultManager, a utility designed for programmers and network administrators to investigate and modify the NeXTSTEP default database. The company plans to release in mid-January DefaultManager 2.9, an interim single-user release for NeXTSTEP 3.0. DefaultManager is a major overhaul of the utility will ship in the second quarter. Contact CuillaMartin for more information at 708/223-5164; e-mail: vpnet.chi.il.us!cuilla!chris.

NeXT has gotten the attention of the U.S. House of Representatives. In November, the company was the first UNIX workstation vendor to address the House's subcommittee on schedule, which means NeXT will be able to sell its hardware and software to the various subcommittees. In other news from the capital, the Defense Information Systems Agency awarded a contract to Digicon, which will be producing the agency with \$2.4 million worth of NeXT computers and custom software.

Systemhouse, a \$700-million-per-year consulting firm that specializes in [CONTINUED ON PAGE 10]